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C. 10

Computed AR of Polar Stars

1863 Aug 22. —

1864 Nov. 14.

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Polaris + .03

1863	August 22d		Aug 24th		Sept. 2		Sept. 5	
	9.9815		9.9883		9.9946		9.9979	
Log (A-2)	0.0150n		0.0114n		0.0052n		0.0021n	
" B	0.6063		0.6055		0.5863		0.5960	
" C	1.2079		1.2162		1.2460		1.2535	
" D	1.0177n		0.9921n		0.8452n		0.7796n	
		-1.359		-1.353		-1.329		-1.321
Error minus								
0.8079n			0.8193	+6.60				
9.1030n			9.7085n	-0.51				
9.1070n			0.3232n	-2.10				
9.6794n			0.6715	+4.69				
+0.011				-0.02				
-1.001				0.00				
				+8.66				
Log Cambridge B								
Log 1.2663	1.2813n	-19.11	1.2777n	-18.95				
" b 9.1461	9.7528	+0.57	9.7516	+0.56				
" c 9.1477	0.3556	+2.27	0.3639	+2.31				
" d 9.8866	0.9043n	-8.02	0.8787n	-7.56				
h +0.022		-0.03		-0.03				
v -0.003		-0.01		-0.01				
		-24.33		-23.68				
57 Cephei B								
Log a 1.4846			1.4960n	-31.33	1.4899n	-30.89	1.4867n	-30.67
" b 9.3304n			9.9359n	-0.86	9.9167n	-0.83	9.9244n	-0.85
" c 9.3309n			0.5171n	-3.52	0.5769n	-3.78	0.5544n	-3.64
" d 0.1369			1.1290n	-13.46	0.9621n	-9.60	0.9165n	-8.25
μ -0.031				+0.04		+0.04		+0.04
v +0.009				+0.02		+0.02		+0.02
				-49.11		-45.04		-43.55
25 Camelop. B								
Log a 1.1164	1.1314n	-13.53	1.1278n	-13.42				
" b 9.1426n	9.7491n	-0.56	9.7479n	-0.56				
" c 9.1460n	0.3539n	-2.26	0.3622n	-2.30				
" d 9.7015	0.7197n	-5.24	0.6936n	-4.93				
μ +0.011		-0.01		-0.01				
v +0.002		+0.00		+0.00				
		-21.60		-21.22				

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1863phae.proj..1155

Sept. 10	Sept. 14	Sept. 15	Sept 21	Sept 22
0.0008	0.0032	0.0039	0.0114	0.0127
9.9992n	9.9962n	9.9961n	9.9883n	9.9869n
0.5849	0.5802	0.5838	0.5995	0.5964
1.2630	1.2664	1.2695	1.2730	1.2731
0.6382n	0.4763n	0.4214n	9.7481n	9.3224n
−1.307	−1.296	−1.293	−1.277	−1.274

1.4838n	−30.47	1.4808n	−30.26	1.4807n	−30.25	1.4729n	−29.71	1.4715n	−29.54
9.9153n	− 0.82	9.9106n	− 0.61	9.9152n	− 0.62	9.9299n	− 0.85	9.9272n	− 0.64
0.5939n	−3.92	0.5993n	− 3.98	0.6004n	− 3.99	0.6039n	− 4.02	0.6040n	− 4.02
9.7751n	−5.96	0.6116n	− 4.08	0.5583n	− 3.62	9.8850n	− 0.77	9.4593n	− 0.29
	+ 0.04		+ 0.04		+ 0.04		+ 0.04		+ 0.04
	+ 0.02		+ 0.02		+ 0.02		+ 0.01		+ 0.01
	−41.11		−39.07		−38.62		−35.30		−34.64
1.1156n	−13.05					1.1047n	− 12.73	1.1033n	− 12.69
9.7273n	− 0.53					9.7419n	− 0.56	9.7392n	− 0.55
0.4090n	− 2.56					0.4190n	− 2.62	0.4199n	− 2.63
0.3397n	− 2.19					9.4496n	− 0.28	9.0239n	− 0.11
	− 0.01						− 0.01		− 0.01
	+ 0.00						0.00		0.00
	−18.34						−16.19		−15.99

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1863phae.proj..115S

Polaris +.10

1863	Aug. 22d		Aug. 31st		Sept. 5		Sept. 7	
	9.9846		9.9938		9.9960		0.0009	
$\log(A+z)$	0.0149n		0.0081n		0.0020n		9.9991n	
log B	0.6088		0.5826		0.5981		0.5969	
" C	1.2082		1.2406		1.2536		1.2578	
" D	1.0169n		0.8821n		0.7779n		0.7269n	
δ		−1.359		−1.334		−1.320		−1.315

4 Ursae min. B — ν

log a	1.8853	1.9002n	−79.47
" b	0.0958n	0.7026n	−5.04
" c	0.0056n	1.3040n	−20.14
" d	0.3654	1.5822n	−38.21
μ	−0.017		+0.02
ν	+0.137		+0.25
			−142.59

15h Camelop. B

log a	1.1551
" b	9.4767n
" c	9.4766n
" d	9.7914
μ	+0.009
ν	+0.005

κ Ursae min. B

		ν		ν		ν	
log a	1.7574n	1.7635n	+58.01	1.7594n	+57.46	1.7565	+57.08
" b	0.2411	0.8237	+6.66	0.8392	+6.91	0.8360	+6.89
" c	0.2411	1.4817	+30.32	1.4967	+31.17	1.4989	+31.54
" d	0.1780n	1.3601	+22.92	1.2559	+18.03	1.2049	+16.03
μ	−0.077		+0.10		+0.10		+0.10
ν	+0.151		+0.27		+0.26		+0.26
			+118.28		+113.93		+111.90

74 Ursae min.

		ν	
log a	0.5032n	0.5052	+3.20
" b	9.4072	0.0053	+1.01
" c	9.4130	0.6666	+4.64
" d	9.5001n	0.2780	+1.59
μ	+0.019		+0.03
ν	+0.002		+0.01
			+10.72

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Sept. 10		Sept. 14		Sept. 15		Sept 17		Sept. 21	
0.0036		0.0037		0.0039		0.0054		0.0116	
9.9964n		9.9963n		9.9961n		9.9945n		9.9882n	
0.5846		0.5864		0.5841		0.5936		0.5993	
1.2632		1.2655		1.2696		1.2712		1.2730	
0.6358n		0.4710n		0.4173n		0.2842n		9.7284n	
−1.302		−1.296		−1.293		−1.288		−1.277	
×		×		×				×	
1.8817n	−76.16	1.8816n	−76.14	1.8814n	−76.10			1.8735n	+74.73
0.6804n	−4.79	0.6762n	−4.74	0.6799n	−4.78			0.6951n	−4.96
1.3590n	−22.86	1.0643n	−23.14	1.3654n	−23.19			1.3688n	−23.38
1.2012n	−15.90	1.0364n	−10.87	0.9827n	−9.61			0.2938n	−1.97
	+0.02		+0.02		+0.02				+0.02
	+0.23		+0.23		+0.23				+0.23
	−119.66		−114.64		−113.43				−106.79
								×	
								1.1763n	−15.01
								0.0760n	−1.19
								0.3508n	−0.63
								9.5198n	−0.33
									−0.01
									+0.01
									−22.16
				×				×	
				1.7535	+56.68			1.7456	+55.67
				0.8252	+6.69			0.6404	−0.69
				1.5107	+32.41			1.5141	+32.67
				0.8953	+7.86			0.2064	+1.61
					+0.10				+0.10
					+0.25				+0.25
					+~~104.99~~ 103.99				+90.99
						×			
						0.4977	+3.15		
						0.0008	+1.00		
						0.6842	+4.83		
						9.7843	+0.61		
							−0.02		
							~~0.00~~		
							+9.57		

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Pulkova. + .20

	Sept 4		Sept 5		Sept 7		Sept 17th	
Bh3	9.9968		9.9982		0.0011		0.0055	
log (A-2)	8.0032 n		8.0018 n		9.9989 n		9.9944 n	
" B	0.5962		0.5961		0.5967		0.5941	
" C	1.2515		1.2538		1.2580		1.2712	
" D	0.7988 n		0.7756 n		0.7241 n		0.2765 n	
r-2		-2.323		-1.320		-1.315		-1.287
1 Bracht								
log a	0.9643	0.9625 n	-9.28	0.9661 n	-9.25	0.9632 n	-9.19	0.9567 n -9.09
" b	9.5520 n	0.1482 n	-1.41	0.1501 n	-1.41	0.1487 n	-1.41	0.1461 n -1.40
" r	9.5563 n	0.6078 n	-6.42	0.6101 n	-6.46	0.6143 n	-6.52	0.6275 n -6.72
" d	9.4902	0.2690 n	-1.95	0.2656 n	-1.84	0.2143 n	-1.64	9.7667 n -0.58
μ	+0.005		-0.01		-0.01		-0.01	-0.01
ν	+0.004		+0.01		+0.01		+0.01	+0.01
			-19.06		-18.96		-18.76	-17.79
119 Cygni 13								
log a	0.1542 n	0.6574	+4.54	0.6560	+4.53	0.6531	+4.50	
" b	9.6706	0.2688	+1.85	0.2687	+1.86	0.2673	+1.85	
" r	9.6733	0.9248	+8.41	0.9271	+8.45	0.9313	+8.54	
" d	9.5802 n	0.3790	+2.39	0.3556	+2.27	0.3043	+2.02	
μ	+0.010		-0.01		-0.01		-0.01	
ν	+0.004		+0.01		+0.01		+0.01	
			+17.19		+17.11		+16.91	
70 Cygni 14								
log a	0.9088							
" b	9.7026 n							
" r	9.7056 n							
" d	9.4027							
μ	-0.036							
ν	+0.005							
34 Cygni 14.								
log a	8.6085 n						8.6029	+0.04
" b	9.6786						0.2727	+1.87
" r	9.6824						0.9536	+8.99
" d	9.1967 n						9.4712	+0.30
μ	+0.006							-0.01
ν	+0.007							0.00
								+11.19

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Sept 22	Sept 23.		Sept 24	Sept. 29	Oct. 28	
0.0129	0.6138		0.2179	0.6152	0.0383	
9.9867n	9.9956n	1.2836n	9.9846n	9.9852n	9.9580n	
0.5962	0.5927	1.3554n	0.5919	0.5969	0.6612	1
1.2731	1.2731	220°17'	1.2712	1.2704	1.1859	197°56'
9.1790n	9.2945	1.4730	0.2678	0.3594	1.0703	1.3211
−1.274		−1.271	−1.257	−1.255		−1.175

						0.8930n	−7.81		
						0.2995n	−1.99		
						0.9780n	−9.46		
						9.7621	+0.58		
							+0.02		
							+0.01		
							−18.63		
8.5952	+0.04	8.5943	+0.04	8.5931n	−0.04	8.5927n	+0.04	8.5815	+0.04
0.2748	+1.88	0.2713	+1.87	0.2705	+1.86	0.2755	+1.88	0.3398	+2.19
0.9555	+9.03	0.9555	+9.03	0.9536	+8.99	0.9528	+8.97	0.8683	+7.38
8.3737	+0.02	8.4892n	−0.03	9.4825n	−0.30	9.5541n	−0.36	0.2650n	−1.84
	−0.01		−0.01		−0.01		−0.01		−0.01
	0.00		0.00		0.00		0.00		0.00
	+10.96		+10.90		+10.50		+10.52		+7.76

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Polaris + .27

1863	Aug 30.		Sept 22		Sept. 24.		Sept. 28	
	9.9937		0.0730		0.0145		0.0149	
log (A-2)	0.6062n		9.9866n		9.9850n	1.2742n	9.9846n	
" B	0.5821		0.5960		0.5891	1.3547n	0.5922	
" C	1.2381		1.2731		1.2730	1.4686	1.2711	
" D	9.8968n		9.1038n		9.7559	215°43'	0.2932	
		−1.836		−1.974		−1.268		−1.257
202 Cam. B								
log a	0.6640		0.6586n	−4.47			0.6486n	−4.45
" b	9.6634n		0.2594n	−1.82			0.2556n	−1.80
" c	9.6678n		0.9409n	−8.73			0.9359n	−8.69
" d	8.8901		9.9939n	−0.01			9.1833	+0.15
u	−0.067			+0.06				+0.06
v	+0.002			0.00				0.00
				−14.97				−14.73
3 Cephei H.								
log a	8.5538n		8.5404	+0.03	8.5388	+0.03	8.5384	+0.03
" b	0.0401		0.6361	+4.33	0.6292	+4.26	0.6323	+4.29
" c	0.0409		1.3140	+20.61	1.3139	+20.60	1.3120	+20.57
" d	9.1916n		8.2949	+0.02	8.9430n	−0.09	9.4843n	−0.31
u	+0.086			−0.11		+0.11		+0.11
v	+0.002			+0.00		0.00		0.00
				+24.88		+24.69		+24.61
30 Cephei B								
log a	0.4000		0.3666n	−2.44				
" b	9.9735		0.5695	+3.71				
" c	9.9745		1.2476	+17.68				
" d	8.4469n		7.5507	0.00				
u	+0.035			−0.04				
v	−0.001			0.00				
				+18.91				
Ursae maj. B								
log a	0.1888	0.1950n	−1.57		0.1738n	−1.49	0.1734n	−1.49
" b	0.1328	0.7149n	−5.19		0.7219n	−5.27	0.7250n	−5.31
" c	0.1333	1.3704n	−23.52		1.4062n	−25.49	1.4044n	−25.38
" d	8.8622n	9.7790	+0.60		8.6381n	−0.04	9.1754n	−0.15
u	+0.301		−0.40			−0.38		−0.38
v	+0.001		0.00			0.00		0.00
			−30.08			−32.67		−32.71

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Sept 29	Sept 30	Oct. 22		Oct. 28		Oct. 29	
0.0153	0.0160	0.0353		0.0364		0.0398	
9.9841n	9.9834n	9.9613n	1.1870n	9.9579n		9.9562n	
0.5973	0.6029	0.6369	1.3161n	0.6616		0.6670	
1.2704	1.2694	1.2141	141.16	1.1855		1.1801	
0.3642	0.4249	0.9990	216°37'	1.0711		1.0617	
−1.254	−1.252	−1.192		−1.175		−1.173	
0.6474n	−4.44	0.6253n	−4.22	0.6219n	−4.19	0.6202n	−4.17
0.2663n	−1.85	0.3003n	−2.00	0.3250n	−2.11	0.3304n	−2.14
0.9372n	−8.66	0.8819n	−7.62	0.8533n	+7.13	0.8579n	−7.04
9.3150	+0.21	9.8691	+0.78	9.9612	+0.91	9.9718	+0.93
	+0.06		+0.06		+0.06		+0.06
	0.00		0.00		0.00		0.00
	−14.68		−13.00		−12.46		−12.36
8.5372	+0.03	8.5751	+0.04	8.5117	+0.03	8.5110	+0.03
0.6230	+4.40	0.6770	+4.76	0.7017	+5.03	0.7071	+5.09
1.3103	+20.43	1.2550	+17.99	1.2264	+16.84	1.2210	+16.63
9.6180n	−0.41	0.1901n	−1.55	0.2612n	−1.83	0.2726n	−1.87
	+0.11		+0.10		+0.10		+0.10
	0.00		0.00		0.00		0.00
	+24.34		+21.14		+19.97		+19.78
				0.3579n	−2.28		
				0.6351	+4.32		
				1.1600	14.45		
				9.5180	+0.38		
					−0.04		
					0.00		
					+16.78		
0.1729n	−1.49	0.1722n	−1.49	0.1581n	−1.41		
0.7301n	−5.32	0.7357n	−5.44	0.7697n	−5.88		
1.1037n	−25.33	1.1027n	−25.28	1.3474n	−22.25		
9.2464n	−0.18	9.3071n	−0.20	9.8812n	−0.76		
	−0.38		−0.38		−0.36		
	0.00		0.00		0.00		
	−32.75		−32.79		−30.66		

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Pulcova +.33

	Sept. 7	Sept 28		Oct. 27	Oct. 28
B13	0.0052	0.0150		0.0355	0.0385
log (A+2)	9.9963n	9.9845n	1.2397n	9.9213n	9.9577n
. B	0.5581	0.5922	1.3537n	0.6370	0.6619
. C	1.2619	1.2711	21°34'	1.2138	1.1852
. D	0.6611n	0.2978	1.4546	0.9998	1.0717
	-1.309		-1.257	1.192	-1.175

Bluns mit B4

log a	8.3944n			8.3557	+0.02
" b	0.3921n			1.0291n	-10.69
" c	0.3922n			1.6060n	-40.36
" d	9.1886n			0.1886n	-1.54
μ	-0.091				+0.11
ν	-0.006				-0.01
					-52.47

43 Cephei B4

log a	0.8339			0.5164n	-6.58
" b	9.9196			0.5118	+3.25
" c	9.9209			1.1920	+15.56
" d	9.2731			9.5709	+0.37
μ	+0.068				-0.09
ν	-0.006				-0.01
					+12.50

21 Camelop B3

log a	0.4334n	0.4302	+2.69		0.3911	+2.46
" b	9.8975n	0.4556n	-3.06		0.5594n	-3.63
" c	9.8988n	1.1607n	-14.48		1.0840n	+12.13
" d	9.4614n	0.1225x	+1.33		0.5331n	-3.41
μ	-0.074		+0.10			+0.09
ν	-0.005		-0.01			-0.01
			~~-16.09~~			-16.63

20 Lyn mit B3

			-13.43			
log a	0.8918n	0.8944	+7.84		0.8553	+7.17
" b	9.9595n	0.5476n	-3.53		0.6214n	-4.18
" c	9.9603n	1.2222n	-16.68		1.1455n	-13.98
" d	9.7515n	0.4176	+2.62		0.8282n	-6.73
μ	-0.027		+0.04			+0.03
ν	-0.012		-0.02			-0.02
			-9.73			-17.71

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Oct. 29	Nov 2	Nov. 3	Nov 4	Nov. 23
0.0393	0.0456	0.0465	0.0471	0.0653
9.9562n	9.9490n	9.9479n	9.9472n	9.9231n
0.6623	0.6732	0.6720	0.6710	0.7175
1.1797	1.1559	1.1494	1.1426	0.9523
1.0823	1.1207	1.1296	1.1360	1.2534
-1.173	-1.161	-1.159	-1.156	-1.105

8.3434	+0.02	8.3423	+0.02
1.0653	-11.62	1.0641n	-11.59
1.5481n	-35.33	1.5416n	-34.80
0.3095n	-2.04	0.3184n	-2.08
	+0.11		+0.11
	-0.01		-0.01
	-48.87		-48.35

0.7901n	-6.17	0.7829n	-6.07
0.5669	+3.86	0.5928	+3.91
1.1066	+12.61	1.0768	+11.93
0.3552	+2.27	0.3938	+2.48
	-0.08		-0.08
	-0.01		-0.01
	+12.48		+12.16

0.3896	+2.45	0	0.3813	+2.41	0.3806	+2.40	0.3565	+2.27
0.5696n	-3.67		0.5695n	-3.71	0.5685n	-3.70	0.6150n	-4.12
1.0785n	-11.98		1.0482n	-11.17	1.0414n	-11.00	0.8531n	-7.13
0.5437n	-3.50		0.5910n	-3.90	0.5994n	-3.98	0.7152n	-5.19
	+0.09			+0.09		+0.08		+0.08
	-0.01			-0.01		-0.01		-0.01
	-16.62			-16.29		-16.21		-14.10

0.8655	+7.01	0.8648	+7.00
0.6315n	-4.28	0.6305n	-4.27
1.1097n	-12.87	1.1029n	-12.67
0.8861n	-7.69	0.8945n	-7.64
	+0.03		+0.03
	-0.02		-0.02
	-17.82		-17.77

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Polcosa + 42

1863	Oct. 9		Nov. 4.		Nov. 23		Nov 30	
	0.0038		0.0471		0.0654		0.0760	
	9.9968n		9.9472n		9.9230n		9.9078n	
	0.5877		0.6910		0.7160		0.7319	
	1.2624		1.1420		0.9528		0.8373	
	0.6553		1.1369		1.2542		1.2793	
		−1.309		−1.156		−1.104		−1.085
Gr. 527								
Eq a	0.9079	0.9047n	− 8.03	0.8551n	− 7.16	0.8309n	0.8157n	− 6.54
" b	9.5194	0.1071	+ 1.28	0.1904	+ 1.55	0.2374	0.2513	+ 1.78
" c	9.5249	0.7870	+ 6.02	0.6669	+ 4.65	0.4777	0.3622	+ 2.30
" d	9.4037	0.0620n	− 1.15	0.5126	+ 3.49	0.6579	0.6830	+ 4.82
μ	+ 0.020		−0.03		− 0.02			− 0.02
ν	−0.003		−0.01		0.00			0.00
			−1.92		+ 2.51			+ 2.34
323 Cyni 13								
Eq a	1.2709							
" b	9.8056							
" c	9.8065							
" d	9.8914							
μ	+ 0.164							
ν	− 0.016							
57 Leon mi 13. γ								
	1.3659n				1.2589	+ 19.45		
	0.0315n				0.7695n	− 5.62		
	0.0320n				0.9858n	− 9.66		
	0.1178n				1.3720n	− 23.55		
	+ 0.032					− 1.04		
	−0.039					− 0.05		
						−19.47		
Gr. 750.								
Eq a	1.2715				1.1445n	− 13.95		
" b	9.6142				0.3322	+ 2.15		
" c	9.6158				0.5686	+ 3.70		
" d	9.8323				1.0865	+ 12.20		
μ	+ 0.006					− 0.01		
ν	−0.009					− 0.01		
						+ 4.08		

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Dec 9	Dec 15	Dec 16	Dec 21	Dec 22
0.0863	0.0941	0.0950	0.0992	0.1006
9.9953n	9.8797n	9.8763n	9.8712n	9.8688n
0.7503	0.7478	0.7464	0.7568	0.7602
0.6047	0.3105	0.2375	8.6325	9.4232n
1.3003	1.3079	1.3087	1.3106	1.3106
−1.060	−1.044	−1.041	−1.027	−1.025
0.8032n −6.35	0.6876n	0.6862n	0.7791n −6.01	0.7767n −5.98
0.2697 +1.86	0.2632	0.2658	0.2762 +1.89	0.2796 +1.90
0.1296 +1.35	9.8384	9.7624	8.3574 +0.02	8.9481n −0.09
0.7040 +5.06	0.7116	0.7124	0.7143 +5.18	0.7143 +5.18
−0.02			−0.02	−0.02
0.00			0.00	0.00
+1.90			+2.06	+0.99
	1.1506n −14.14	1.1492n −14.10	1.1421n −13.87	
	0.5534 +3.58	0.5520 +3.67	0.5624 +3.65	
	0.1700 +1.32	0.0440 +1.11	8.6390 +0.04	
	1.1993 +15.62	1.2001 +15.85	1.2020 +15.92	
	−0.17	−0.17	−0.17	
	−0.02	−0.02	−0.02	
	+6.39	+6.24	+5.55	
	1.2456 +17.60		1.2371 +17.26	
	0.7793n −6.02		0.7583n −6.14	
	0.3455n −2.22		8.8645n −0.07	
	1.4257n −26.64		1.4284n −26.62	
	−0.03		−0.03	
	−0.04		−0.04	
	−17.35		−15.84	
	1.1012n −12.62		1.0927n −12.38	
	0.3620 +2.30		0.3710 +2.35	
	9.5293 +0.85		8.4463 +0.03	
	1.1402 +13.81		1.1429 +13.90	
	−0.01		−0.01	
	−0.01		−0.01	
	+4.32		+3.88	

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Saturn +.10

1863	Sept 22	Sept. 23	Sept 24	Sept 28
	0.0128	0.0138	0.0144	0.0149
	9.9886 n	9.9857 n	9.9851 n	9.9846 n
	0.5966	0.5930	0.5895	0.5914
	1.2731	1.2731	1.2730	1.2712
	9.2695 n	9.2065	9.7064	0.3799
	−1.274	−1.271	−1.269	−1.258

4 Un mi D

Lg	1.8852	1.8709 n	− 74.28	
b	0.0960 n	0.6890 n	− 4.89	
c	0.0960 n	1.3691 n	− 23.39	
D	0.5653	9.7748	+ 0.60	
Δ	−0.017		+ 0.02	
r	+0.137		+ 0.22	
			−101.72	

156 Camelia

Lg	1.1880
b	9.4768 n
c	9.4769 n
D	9.7914
Δ	+0.009
r	+0.005

Un mi D

Lg	1.7576 n	1.7444	+ 55.51	1.7433	+ 55.37	1.7427	+ 55.30	1.7422 + 55.23
b	0.2409	0.8375	+ 6.88	0.8339	+ 6.82	0.8304	+ 6.77	0.8323 + 6.80
c	0.2410	1.5141	+ 32.67	1.5141	+ 32.67	1.5140	+ 32.66	1.5172 + 32.52
D	0.4781 n	9.7476	+ 0.56	9.6576 n	− 0.49	0.1865 n	− 1.54	0.7550 n + 5.73
μ	−0.077		+ 0.10		+ 0.16		+ 0.10	+ 0.10
r	+0.157		+ 0.24		+ 0.24		+ 0.24	+ 0.24
			+ 95.96		+ 94.71		+ 93.53	+ 89.16

Ju Diremi

Lg	0.5032
b	9.6072
c	9.6131
D	9.5001
Δ	+0.019
r	+0.002

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1863phae.proj..115S

Oct 1	Oct. 23	Oct. 28	Oct 29	Nov 19
0.0168	0.0357	0.0382	0.0395	0.0626
9.9825n	9.9611n	9.9581n	9.9585n	9.9288n
0.6078	0.6371	0.6606	0.6662	0.7034
1.2686	1.2105	1.1865	1.1810	1.0084
0.4694	1.0100	1.0693	1.0799	1.2345
-1.249	-1.169	-1.176	-1.173	-1.116

1.1491n	-14.10
0.1139n	- 1.30
0.6894n	- 4.89
0.5014	+ 6.33
	- 0.01
	+0.01
	-13.96

1.7187	+ 52.32	1.7157	+52.96	1.7141	+51.77	1.6844	+ 48.35
0.8780	+ 7.55	0.9015	+ 7.97	0.9071	+ 8.08	0.9443	+ 8.80
1.5515	+ 36.28	1.4275	+ 26.76	1.4230	+26.42	1.2494	+17.76
1.4881n	-30.77	1.5474n	-35.27	1.5580n	-36.14	1.7126n	- 57.59
	+ 0.09		+ 0.09		+0.09		+ 0.09
	+0.21		+0.21		+0.21		+0.19
	+57.68		+51.75		+50.43		+23.60

0.4857	+3.06
0.0150	+1.04
0.6817	+4.81
9.9695n	-0.93
	-0.02
	0.00
	+7.96

0.4300	+2.69
0.1106	+1.29
0.4215	+2.64
0.7346n	-5.43
	-0.02
	0.00
	+1.17

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1863phae.proj..115S

Julia +.03

1863 Sept 23	Sept. 28	Sept. 30	Oct 1
0.0137	0.0149	0.0158	0.0168
9.9858n	9.9846n	9.9836n	9.9825n
0.5933	0.5911	0.6016	0.6070
1.2731	1.2713	1.2697	1.2687
9.1399	0.2742	0.4110	0.4659
-1.272	-1.258	-1.252	-1.250

57 Capricorni A sp

log a. 1.1866		1.4704n	-29.54	1.4692n	-29.46	1.4682n	-29.39	1.4671n -29.32
" b 9.3306n		9.9239n	+0.84	9.9217n	+0.84	9.9322n	+0.86	9.9376n +0.87
" c 9.3311n		0.6042n	-4.02	0.6024n	-4.00	0.6008n	-3.99	0.5998n -3.98
" B 0.1368		9.2767	+0.19	9.4110	+2.56	9.5478	+3.53	0.6027 +4.00
μ	-0.031		-0.04		-0.04		-0.04	-0.04
ν	+0.009		+0.01		+0.01		+0.01	+0.01
			-34.26		-31.75		-30.74	-30.20

25 Camelop B sp

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1863phae.proj..115S

Pulcova +.26

	1863 Nov. 2		Nov. 3		Nov. 4		Nov. 23	
	0.0455		0.0464		0.0471		0.0653	
	9.9492n	0.6676n	9.9480n	0	9.9472n	0.6058n	9.9231n	0.0519
	0.6732	1.2798n	0.6721		0.6711	1.2693n	0.7172	1.1533n
	1.1563	193°44'	1.1499		1.1431	192°15'	0.9551	175°28'
	1.1201	1.2924	1.1290		1.1375	1.2793	1.2535	1.1547
		−1.162		−1.159		−1.156		−1.104
20 Cam B of								
0.6639	0.6131n	− 4.10	0.6119n	− 4.09	0.6111n	− 4.08	0.5870n	− 3.86
9.6634n	0.3366n	− 2.17	0.3355n	− 2.17	0.3345n	− 2.16	0.3826n	− 2.40
9.6674n	0.6241n	− 6.70	0.6177n	− 6.57	0.6109n	− 6.47	0.6329n	− 4.20
8.8900	0.0101	+ 1.02	0.0190	+ 1.05	0.0275	+ 1.06	0.1435	+ 1.39
−0.047		+ 0.05		+ 0.05		+ 0.05		+ 0.05
+1.002		0.		0.		0.		0.
		− 11.90		− 11.73		− 11.60		− 9.02
39 Cephei A								
8.5623n	8.5115	+ 0.03	8.5103	+ 0.03	8.5096	+ 0.03	8.4854	+ 0.03
0.0602	0.7134n	+ 5.17	0.7123	+ 5.16	0.7113	+ 5.14	0.7574	+ 5.72
0.0411	1.1974n	+ 15.75	1.1910	+ 15.52	1.1842	+ 15.28	0.9962	+ 9.91
9.1912n	0.3113n	− 2.05	0.3202n	− 2.09	0.3287n	− 2.13	0.4747n	− 2.78
+0.056		− 0.10		− 0.10		− 0.10		− 0.05
+0.002		0.00		0.00		0.00		0.00
		+18.80		+18.52		+18.22		+12.79
30 Cephei B.								
log a 0.1001								
" b 9.9735								
" r 9.9747								
" d 8.4465n					0.3473n	− 2.22	0.3232n	− 2.10
+0.035					0.6446	+ 4.41	0.6907	+ 4.91
−0.001					1.1178	+13.12	0.9298	+ 8.57
					9.5840n	− 0.38	9.7000n	− 0.50
						− 0.04		− 0.04
						0.00		0.00
						+14.89		+10.98
5 Lac ni Bop								
log a 0.1868	0.1380n	− 1.37	0.1368n	− 1.37	0.1360n	− 1.37		
" b 0.1327n	0.8059n	− 6.40	0.8048n	− 6.38	0.8036n	− 6.37		
" c 0.1332n	1.2695n	− 19.48	1.2681n	− 19.19	1.2763n	− 18.59		
" d 8.8872n	0.0023n	− 1.01	0.0012n	− 1.03	0.0197n	− 1.05		
+0.301		− 0.35		− 0.35		− 0.35		
+1.001		0.00		0.00		0.00		
		−28.61		−28.32		−28.03		

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1863phae_proj_1155

Nov 26		Nov 30		Dec 16		Dec 21		Dec 23	
0.0694		0.0758		0.0858		0.0990		0.1119	
9.9174n		9.9081n		9.8930n		9.8716n		1.8686n	
0.7308		0.7322		1.7526		0.7543		0.7623	
0.9105		0.8404		0.5742		9.0828		9.7372n	
1.2654		1.2788		1.3017		1.3106		1.3104	
	−1.096		−1.085		−1.058		−1.028		−1.022
0.5513n	−3.61	1.5720n	−3.73	0.5569n	−3.60	0.5355n	−3.43	0.5305n	−3.39
0.3942n	−2.48	0.3956n	−2.49	0.4159n	−2.61	0.4177n	−2.62	0.4257n	−2.66
0.8783n	−3.79	0.5682n	−3.22	0.2620n	−1.74	8.7556n	−0.06	9.4050	+0.25
0.1552	+1.43	0.1688	+1.48	0.1917	+1.46	0.2006	+1.59	0.2004	+1.59
	+0.05		+0.05		+0.05		+0.05		+0.05
	0.		0.		0.		0.		0.00
	−8.60		−7.91		−6.44		−4.47		−4.16
8.4397		8.4704		8.4553		8.4339	+0.03	8.4789	+0.03
0.1210		0.1724		0.1927		0.1945	+6.23	0.8025	+6.35
0.9516		0.8815		0.6153		9.1239	+0.13	9.7783	−0.60
0.4566n		0.4700n		0.4924n		0.5048n	−3.18	0.5016n	−3.17
							−0.09		−0.09
							0.00		0.00
							+3.12		+2.52
0.1062n	−1.28	0.0969n	−1.25						
0.8635n	−7.30	0.8649n	−7.32						
1.0137n	−11.06	0.9736n	−9.41						
0.1476n	−1.40	0.1610n	−1.45						
	−0.33		−0.33						
	0.00		0.00						
	−21.37		−19.76						

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1863phae.proj..115S

Pulwood +.20

	1863. Nov. 3 (1)		Nov 19		Nov 25		Dec 1	
	0.0643		0.0626		0.0638		0.0768	
	9.9482n	9.9474n	9.9268n		9.9196n	0.2005	9.9066n	0.4701
	0.6722	0.6712	0.7034		0.7250	1.1394n	0.7307	1.0797n
	1.1503	1.1435	1.0072		0.9269	1.1423	0.8219	1.0924
	1.1264	1.1249	1.2350		1.2613	173°26'	1.2816	166°12'
		−1.159		−1.115		−1.099		−1.083
1 Draconis 2p	Nov 4	−8.16	✓		✓		[✓]	
2p a 0.9642	0.9116n	+.9716	0.6910n	−7.88	0.8838n	−7.65	0.6708n	−7.43
" b 9.5320n	0.2332n	−1.67	0.2854n	−1.80	0.2790n	−1.90	0.2827n	−1.92
" 9.5563n	0.4998n	−5.01	0.5635n	−3.66	0.5832n	−3.04	0.3782n	−2.39
" 9.4901n	0.6270	+4.24	0.7251	+5.31	0.7514	+5.64	0.5717	+5.91
+0.005		−0.01		−0.01		−0.01		−0.01
+0.004		+0.01		0.00		0.00		0.00
	Nov 3	−10.60		−8.04		−6.96		−5.84
119 Aquarii 13			✓		✓			
0.6543n			0.5811	+3.61	0.5739	+3.75		
9.6706			0.3740	+2.37	0.3974	+2.60		
9.6733			0.6805	+4.79	0.6002	+3.98		
9.5803n			0.6153n	−6.54	0.6416n	−6.94		
+0.010				−0.01		−0.01		
+0.004				0.00		0.00		
				+4.42		+3.78		
30 Lacaille 37	✓							
0.9087	0.8569n	−7.19					0.8153n	−6.54
9.7026n	0.3747n	−2.37					0.4332n	−2.71
9.7056n	0.8559n	−7.18					0.5275n	−3.37
9.4025	0.5309	+3.40					0.6861	+4.85
−0.036		+0.04						+0.04
+0.005		+0.01						+0.01
		−13.29						−7.72
54 Cephei H.								
0.6149n								
9.6767								
9.6825								
9.1948n								
+0.006								
+0.001								

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1863phae.proj..115S

Dec 2		Dec 7		Dec 9		Dec 10		Dec 15	
0.0775		0.0609		0.1539		0.0557		0.0939	
9.5056n		9.9005n		9.8959n		9.8931n	0.6343	9.8600n	
0.7296		0.7414		0.7496		0.7524	1.1502n	0.7481	
0.8010		0.6758		0.8123		0.8765	1.1698.	0.3781	
1.2863		1.2963		1.2999		1.3016	161°54'	1.3078	
	−1.080		−1.066		−1.061		−1.058		−1.044

0.8143	+6.52	0.8092n	+6.45			0.8018	+6.34		
0.4321n	−2.70	0.4439n	−2.78			0.4549n	−2.85		
0.5066n	−3.21	0.3814n	−2.41			0.2821n	−1.92		
0.6564	+4.86	0.6988	+5.00			0.7041	+5.06		
	+0.04		+0.04				+0.04		
	+0.01		+0.01				+0.01		
	+7.52		+6.59				−6.08		

				8.5708	+0.03	8.5060	−0.03	8.4949	+0.03
				0.4783	+2.68	0.4311	+2.64	0.4268	+2.67
				0.2948	+1.97	0.2590	+1.82	0.0106	+1.02
				0.4947n	−3.12	0.4964n	−3.17	0.5026n	−3.18
					−0.01		−0.01		−0.01
					0.00		0.00		
					+1.55		+1.39		+0.53

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1863phae.proj..115S

Pulkova +.50

	1863 Nov. 23.		Dec 15		Dec 21		Dec 26	
	0.0655		1.0942		0.0993		0.1074	
	9.9228n		9.8795n		9.8710n		9.8570n	
	0.7164		0.7476		0.7571		0.7620	
	0.9517		0.3079		8.6128		0.2098n	
	1.2545		1.3060		1.3106		1.3090	
		-1.104		-1.044		-1.027		-1.014
62 Um mit B ep	x		x		x		x	
0.8330n	0.7558	+5.70	0.7125	+5.16	0.7040	+5.06	0.6900	+4.90
9.4636n	0.1820n	-1.52	0.2112n	-1.63	0.2207n	-1.66	0.2286n	-1.68
9.4665n	0.4182n	-2.62	9.7744n	-0.59	8.0793n	-0.07	9.6760	+0.47
9.6954n	0.9499n	-8.91	1.0034n	-10.08	1.0080n	-10.14	1.0044n	-10.10
+0.015		-0.02		-0.02		-0.02		-0.02
-0.004		0.00		0.00		000		0.00
		-7.37		-7.16		-6.77		-6.43
ε Ursae min ep								
0.8078n	0.7306		0.6873		0.6756		0.6638	
9.1032n	9.8216n		9.8508n		9.8600n		9.8652	
9.6077n	0.4569n		0.4167n		0.4240n		0.3167	
9.6793n	0.9328n		0.9873n		0.9899n		0.9883n	
+0.011								
-0.001								
64 Cassiop B			x					
1.2663			1.1456n	-13.99				
9.1449			9.8925	+0.78				
9.1465			0.4564	+2.85				
9.5867n			1.1947	+15.66				
+0.022				-0.02				
-0.003				0.00				
				+5.28				
27 Cephei H.								
1.4845								
9.3372n								
9.3337n								
0.1368								
-0.031								
+0.009								

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Dec 29		Dec 30		1864 Jan 11		Jan 14		Jan 16	
0.1106		0.1112		9.5260		9.5335		9.5384	
9.8512n		9.8501n		9.8223n	0.7584	9.8183n		9.8159n	
0.7542		0.7525		0.7536	0.0886	0.7482		0.7500	
0.4168n		0.4184n		0.8318n	38°58'	0.8870n		0.9196n	
1.3064		1.3052		1.2801	0.7665	1.2705		1.2631	
	-1.005		-1.003		-0.970		-0.962		-0.956
	✓		✓		✓				
0.6842	+4.83	0.6831	+4.82	0.6555	+4.52				
0.2178n	-1.65	0.2161n	-1.64	0.2172n	-1.65				
9.8833	+0.76	9.9349	+0.86	0.2923	+1.99				
1.0018n	-10.04	1.0006n	-10.01	0.9755n	-9.45				
	-0.02		-0.02		-0.01				
	0.00		0.00		0.00				
	-6.12		-5.99		-4.60				
	✓								
0.6580	+4.55	0.6589							
9.8574n	-0.72	9.8557n							
9.5240	+0.33	0.5756							
0.9857n	-9.68	0.9845n							
	-0.01								
	0.00								
	-5.53								
	✓								
1.1175n	-13.11								
9.8791	+0.79								
9.5633n	-0.37								
1.1931	+15.60								
	-0.02								
	0.00								
	+2.89								
	✓				✓		✓		✓
1.3357n	+21.66			1.3070n	-20.28	1.3030n	-20.09	1.3004n	-19.97
0.0864n	-1.22			0.0858n	-1.22	0.0804n	-1.20	0.0822n	-1.21
9.7495	+0.56			0.1645	+1.46	0.2197	+1.66	0.2523	+1.79
1.4432	+27.75			1.4169	+26.12	1.4073	+25.54	1.3999	+25.11
	+0.03				+0.03		+0.03		+0.03
	+0.01				+0.01		+0.01		+0.01
	+~~46.73~~ 51.47				+6.12		+5.95		+5.76

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Pulcova +.33

	1863 Nov 26		Nov 30		Dec 7		Dec 9	
	0.0696		0.0759		0.1810		0.0841	
	9.9171 n		9.9026 n		9.9003 n		9.8956 n	
	0.7311		0.7321		0.7420		0.7510	
	0.9093		0.8391		0.6720		0.6079	
	1.2656		1.2790		1.2965		1.3002	
		−1.096		−1.085		−1.066		−1.060
6 Urs mi Dep								
8.3802 n			8.1882	+0.01				
0.3920 n			1.1241 n	−13.31				
0.3921 n			1.3012 n	−17.03				
9.1887 n			0.4677 n	−2.94				
	−0.092			+0.10				
	−0.006			−0.01				
				−33.18				
53 Cephei H								
log a 0.8391	0.7512 n	−5.64	0.7421 n	−5.52	0.7344 n	−5.43		
" b 9.9197	0.6508	+4.53	0.6518	+4.49	0.6617	+4.58		
" c 9.9210	0.8303	+6.77	0.7601	+5.76	0.5930	+3.91		
" d 9.2734	0.5390	+3.46	0.5524	+3.55	0.5699	+3.71		
m +0.088		−0.07		−0.07		−0.07		
v −0.006		−0.01		−0.01		−0.01		
		+9.08		+8.20		+6.69		
214 Camel 23.								
log a 0.4331 n	0.3502	+2.24	0.3411	+2.19	0.3334		0.3267	+2.13
" b 9.6974 n	0.6285 n	−4.25	0.6295 n	−4.26			0.6574 n	−4.44
" c 9.8987 n	0.8080 n	−6.43	0.7378 n	−5.57			0.5056 n	−3.21
" d 9.4613 n	0.7269 n	−5.34	0.7403 n	−5.40			0.7615 n	−5.58
m −0.074		+0.08		+0.08				+0.08
v −0.005		−0.01		−0.01				−0.01
		−13.79		−12.97				−11.23
20 Urs mi B								
log a 0.5973 n			0.8053	+6.39			0.8029	+6.35
" b 9.9541 n			0.6915 n	−4.91			0.7094 n	−5.02
" c 9.9802 n			0.7993 n	−6.30			0.5681 n	−3.70
" d 9.7567 n			1.0357 n	−10.86			1.0519 n	−11.40
m −0.027				+0.03				+0.03
v −0.012				−0.01				−0.01
				−15.66				−13.75

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Dec 10	Dec 15		Dec 21	Dec 22	Dec 23
0.0859	0.0940		0.0991	0.1005	0.1021
9.6928n	9.8799n	0.7084	9.8714n	9.8690n	9.8663n
0.7526	0.7479	0.5856n	0.7565	0.7600	0.7626
0.5717	0.3197	9.9651	8.9865	9.3741n	9.7536n
1.3018	1.3079	1.6023	1.3106	1.3106	1.3104
−1.058		−1.044	−1.028	−1.025	−1.022

								0.7004n	−5.02
0.7269n	−5.34							0.6823	+4.80
0.6723	+4.70							9.6746n	−0.47
0.4927	+3.11							0.5838	+3.83
0.5752	+3.76								−0.07
	−0.07								−0.01
	−0.01								+3.06
	+6.15								
		0.3130	+2.06	0.3045	+2.02			0.2994	+1.99
		0.6453n	−4.42	0.6539n	−4.51			0.6600n	−4.57
		0.2166n	−1.65	8.8855n	−0.08			9.6523	+0.45
		0.7692n	−5.88	0.7719n	−5.91			0.7717n	−5.91
			+0.08		+1.08				+0.08
			−0.01		−0.01				−0.01
			+9.82		−8.41				−7.97
				0.7687	+5.67	0.7663	+5.64	7636	+5.80
				0.7159n	−5.20	0.7194n	−5.24	0.7220n	−5.27
				8.9470n	−0.09	9.3313	+0.22	9.7138	+0.57
				1.0673n	−11.68	1.0673n	−11.68	1.0671n	−11.67
					+0.03		+0.03		+0.03
					−0.01		−0.01		−0.01
					−11.08		−10.64		−10.60

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Orlova + 42

	1863. Dec 23		Dec 26		Dec 29		Dec 30	
	0.1022		0.1073		0.1105		0.1111	
	9.8661n		9.8572n		9.8514n	0.7756	9.8503n	
	0.7626		0.7621		0.7563	0.6905	0.7528	
	9.7760n		0.2022n		0.4125n	117°15'	0.4645n	
	1.3104		1.3090		1.3064	0.8297	1.3053	
		-1.023		-1.014		-1.006		-1.003
Gr 527								
log a	0.9080	0.9741n	-5.95		0.7594n	-5.75	0.7583n	-5.73
" b	9.5194	0.2820	+1.91		0.2737	+1.88	0.2722	+1.87
" c	9.5269	9.3009n	-0.20		9.9374n	-0.87	9.9894n	-0.97
" d	9.4038	0.7142	+5.18		0.7602	+5.13	0.7091	+5.12
μ	+0.020		-0.02			-0.02		-0.02
ν	-0.023		0.00			0.00		0.00
			+0.92			+0.37		+0.27
323 Ephem B								
log a	1.2710							
" b	9.6056		1.1282n	-13.43	1.1224n	-13.26		
" c	9.6065		0.5677	+3.70	0.5599	+3.63		
" d	9.6915		0.0087n	-1.02	0.2190n	-1.66		
			1.2005	+15.87	1.1979	+15.77		
μ	+0.164			-0.17		-0.16		
ν	-0.016			-0.02		-0.02		
				+4.93		+4.30		
57 Illum B.p								
log a	1.3657n		1.2229	+16.71	1.2171	+16.49		
" b	0.0317n		0.7938n	-6.22	0.7660n	-6.11		
" c	0.0320n		0.2342	+1.72	0.2445	+2.78		
" d	0.1178n		1.4288n	-26.72	1.4262n	-26.56		
μ	+0.032			-1.03		-0.03		
ν	-0.039			-0.04		-0.04		
				-14.58		-13.47		
Gr 550								
log a	1.2715		1.0757n	-11.90	1.0729n	-11.63	1.0718n	-11.80
" b	9.6112		0.3763	+2.38	0.3685	+2.34	0.3670	+2.33
" c	9.6158		9.8180n	-0.66	0.0283n	-1.07	0.0603n	-1.20
" d	9.8323		1.1413	+13.65	1.1367	+13.76	1.1376	+13.72
μ	+0.006			-0.01		-0.01		-0.01
ν	-0.009			-0.01		-0.01		-0.01
				+3.65		+3.18		+3.07

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1864 Jan 5		Jan 9		Jan 11	Jan 12	Jan 21
9.4874		9.5158		9.5256	9.5269	9.5620
9.8405n		9.8274n		9.8225n	9.8209n	9.8029n
0.7629		0.7606		0.7539	0.7509	0.7563
0.6872n		0.7880n		0.8302n	0.8496n	0.9886n
1.2954		1.2860		1.2803	1.2783	1.2423
	−0.987		−0.976	−0.970	−0.968	−0.963
x		x				
0.7486n	−5.61	0.7356n	−5.44			
0.2823	+1.91	0.2800	+1.90			
0.2121n	−1.63	0.0129n	−2.06			
0.6992	+5.00	0.6898	+4.90			
	−0.02		−0.02			
	0.00		0.00			
	−0.35		−0.72			
x		x				x
1.1216n	−12.93	1.0984n	−12.54			1.0739n −11.86
0.5685	+3.70	0.5667	+3.68			0.5619 +3.65
0.4937n	−3.12	0.5945n	−3.93			0.7951n −6.24
1.1869	+15.38	1.1775	+15.05			1.1338 +13.61
	−0.16		−0.16			−0.15
	−0.02		−0.02			−0.01
	+2.85		+2.08			−1.00
x		x				
1.2063	+16.08	1.1931	+15.60			
0.7946n	−6.23	0.7923n	−6.20			
0.7192	+5.24	0.8200	+6.61			
1.4132n	−25.69	1.4038n	−25.04			
	−0.03		−0.03			
	−0.04		−0.04			
	−10.87		−9.40			
				x	x	
				1.0440n	−11.07	1.0424n −11.03
				0.3661	+2.34	0.3651 +2.32
				0.5460n	−2.79	0.5456n −2.92
				1.1126	+12.96	1.1096 +12.87
					−0.01	−0.01
					−0.01	−0.01
					+1.42	+1.22

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Polaris +.26

	1863 Dec. 26th		Dec 30		1864 Jan 2		Polaris +.76 Morning Jan 8	
	0.1071		0.1110		9.4715		9.5716	
	9.8575n		9.8505n		9.6475n		9.8294n	
	0.7624		0.7528		0.7547		0.7623	
	0.1875n		0.1567n		0.5846n		0.7731n	
	1.3091		1.3055		1.3023		1.2877	
		−1.014		−1.003		−1.995		−0.977
202 Lacaille Bop		x						
0.6639	0.5214n	−3.32	~~0.5714n~~					
9.6634n	0.4258n	−2.66						
9.6678n	9.8553	+0.72						
8.8699	0.1990	+1.58						
−0.047		+0.05						
+0.002		0.00						
		−3.63						
39 Eridani A		x						
8.5862n	8.4257	+0.03						
0.0403	0.8077	+6.35						
0.0411	0.2786n	−1.69						
9.1912n	0.5003n	−3.17						
+0.086		−0.09						
+0.002		0.00						
		+1.43						
309 Eridani B	x		x		x		x	
0.4001	0.2576n	−1.81	0.2506n	−1.78			0.2295n	−1.70
9.9736	0.7360	+5.34	0.7264	+5.33			0.7359	+5.44
9.9746	0.1621n	−1.45	0.4313n	−2.69			0.7477n	−5.60
8.4464n	9.7555n	−0.57	9.7519n	−0.56			9.7341n	−0.54
+0.035		−0.04		−0.04				−0.03
−0.001		0.00		−0.01				0.00
		+1.47		+0.25				−2.43
5 Eridani B	x							
0.1868	9.0463n	−1.11						
0.1326n	0.8950n	−7.85						
0.1331n	0.3206	+2.09						
8.5822n	0.1973n	−1.55						
+0.304		−0.31						
+0.001		0.00						
		−8.73						

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1863phae.proj..115S

Pola +.23

1863 Dec 15	Dec 23.	Dec 21
0.0539	0.1019	
9.8840 n	9.8666 n	
0.7481	0.7623	
0.3265	9.7275 n	
1.3078	1.3104	
−1.0244	−1.0223	

36 Cephei						
	x		x			
Log a 3.6160 n	8.4960	+0.03	8.4826	+0.03	8.4836	+0.03
" r 9.6757	0.4268	+2.67	0.4410	+2.76	0.4330	+2.70
" r 9.6825	0.0090	+1.02	9.4100 n	−0.26	8.7653	+0.06
" d 9.1946	0.5026 n	−3.18	0.5052 n	−3.20	0.5056 n	−3.20
μ +0.006		−0.01		−0.01		−0.01
r +0.004		0.00		0.00		0.00
		+0.53		−0.68		−0.42

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	1863 Dec 26		1863 Dec 29		1863 Dec 30		1864 Jan 1	
	0.1072		0.1104		0.1111		9.3609	
	9.8584n	0.7733	9.8576n		9.8503n		9.8486n	
	0.7623	0.6258n	0.7546		0.7528		0.7527	
	0.1942n	135°26'	1.1074n		0.1602n		0.5790n	
	1.3091	0.8622	1.3065		1.3054		1.3027	
		-1.014		-1.006		-1.003		-0.998
6 Urs min B np								
8.3579n		8.2153		+0.02				
0.3919n		1.1542n		-14.36				
0.3920n		0.5862		+3.86				
9.1886n		0.4977n		-3.15				
	-0.091			+0.09				
	-0.006			-0.01				
				-13.45				
23 Cephei H np								
0.8341		0.6915n		-4.91				
9.9197		0.6620		+4.80				
9.9210		9.1152n		-1.31				
9.2734		0.5825		+3.82				
	+0.068			-0.07				
	-0.006			-0.01				
				+2.32				
24 Lacerta B np								
0.4331n		0.2905		+1.95	0.2647	+1.93	0.2834	+1.92	0.2817	+1.91
9.8974n		0.6597n		-4.57	0.6520n	-4.47	0.6502n	-4.47	0.6501n	-4.47
9.8987n		0.0929		+1.24	0.3061	+2.02	0.3589	+2.29	0.4477	+2.80
9.4612n		0.7703n		-5.09	0.7677n	-5.86	0.7686n	-5.84	0.7639n	-5.81
	-0.074			+0.08		+0.07		+0.07		+0.07
	-0.005			-0.01		-0.01		-0.01		0.00
				-7.20		-6.34		-6.04		-5.50
20 Ursae B np								
0.8973n		0.7557		+5.70	0.7489	+5.69	0.7476	+5.59		
9.9594n		0.7147n		-5.27	0.7140n	-5.16	0.7122n	-5.15		
9.9602n		0.1564		+1.43	0.3676	+2.33	0.4204	+2.63		
9.7567n		1.0658n		-11.64	1.0632n	-11.57	1.0602n	-11.54		
	-0.027			+0.03		+0.03		+0.03		
	-0.012			-0.01		-0.01		-0.01		
				-9.76		-8.71		-8.45		

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1863phae.proj..115S

Obs. +.83 Morning

Jan 5		Jan 6		Jan 6			
9.4868		9.4939		9.5121			
9.8409 m	0.7671	9.8377 m	0.7676	9.8292 m	0.7667		
0.7627	9.9944 n	9.7643	9.8152 n	0.7622	9.4065		
0.6815 m	99°35'	0.7175 m	96°22'	0.7746 m	0.7871		
1.2956	0.7702	1.2935	0.7703	1.2875	87°30'		
	-0.967		-0.964		-0.977		
				8.1871	+ 0.02		
				1.1541 m	- 14.26		
				1.1666	+ 14.68		
				0.4761 m	- 2.99		
					+ 0.09		
					- 0.01		
					- 2.47		
0.6718 m	-4.72			0.6633 m	- 4.60		
0.6840	+ 4.84			0.6819	+ 4.81		
0.6335 m	-4.30			0.6956 m	- 4.96		
0.5869	+ 3.69			0.5609	+ 3.64		
	- 0.07				- 0.07		
	- 0.01				- 0.01		
	- 0.57				- 1.19		
0.2708	+ 1.86						
0.6617 m	- 4.58						
0.6112	+ 4.08						
0.7547 m	- 5.69						
	+ 0.07						
	0.00						
	- 4.26						
0.7382	+ 5.47						
0.7221 m	- 5.28						
0.6417	+ 4.38						
1.0523 m	- 11.28						
	+ 0.03						
	- 0.01						
	- 0.69						

Obs. - +.33 Evening

Jan 9			
9.5152			
9.8277 m	0.7608		
0.7608	9.4065		
0.7860 m	0.7871		
1.2862	87°30'		
	-0.976		
8.1856	- 0.02		
1.1527 m	- 14.21		
1.1780	+ 15.07		
0.4748 m	- 2.98		
	+ 0.09		
	- 0.01		
	- 2.02		
0.6618 m	- 4.58		
0.6805	+ 4.79		
0.7070 m	- 5.09		
0.5596	+ 3.63		
	- 0.07		
	- 0.01		
	- 1.33		
0.2608	+ 1.82		
0.6582 m	- 4.55		
0.6847	+ 4.84		
0.7471 m	- 5.59		
	+ 0.07		
	0.00		
	-3.41		
0.7250	+ 5.31		
0.7202 m	- 5.25		
0.7462	+ 5.48		
1.0429 m	- 11.02		
	+ 0.03		
	- 1.01		
	- 5.46		

Obs. +.33

Jan 10			
9.5208			
9.8249 m	0.7577		
0.7577	9.4065		
0.8077 m	0.7871		
1.2835	87°30'		
	-0.973		
8.1828	+ 0.02		
1.1496 m	- 14.12		
1.1998	+ 15.64		
0.4721 m	- 2.97		
	+ 0.09		
	- 0.01		
	- 1.15		
0.2550	+ 1.81		
0.6551 m	- 4.52		
0.7064	+ 5.09		
0.7447 m	- 5.56		
	+ 0.07		
	0.00		
	-3.11		

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Cntr. +.33

	1863 Jan 11		Jan 12		Jan 14		Jan 16	
	9.5253		9.5286		9.5332		9.5379	
	9.6227n		9.6210n	μ = 0.7532	9.8187n		9.8162n	
	0.7532		0.7531	μ = 0.1481	0.7481		0.7502	
	0.8286n		0.8478n	76°31'	0.8640n		0.9169n	
	1.2606		1.2775	0.7662	1.2710		1.2638	
		−0.970		−0.964		−0.962		−0.957

6 Urs min Bep

43 Cephei H								
0.8342	0.6569n	−4.54	0.6552n	−4.52	0.6529n	−4.50	0.6504n	−4.47
9.9198	0.8240	+4.74	0.6709	+4.69	0.6679	+4.66	0.6700	+4.68
9.9211	0.7695n	−5.62	0.7689n	−5.87	0.8851n	−6.38	0.8380n	−6.69
9.2735	0.5541	+3.58	0.5510	+3.56	0.5445	+3.50	0.5373	+3.45
+0.068		−0.07		−0.07		−0.07		−1.07
−0.006		−0.01		−0.01		−0.01		−0.01
		−1.92		−2.22		−2.40		−3.31

24 Camel Bep								
0.4329n	0.2586	+1.80	0.2539	+1.79	0.2516	+1.79	0.2491	+1.78
9.6973n	0.6515n	−4.48	0.6464n	−4.45	0.6454n	−4.42	0.6475n	−4.44
9.8986n	0.7370	+5.34	0.7464	+5.58	0.7826	+6.06	0.8155	+6.54
9.4612n	0.7418n	−5.52	0.7387n	−5.48	0.7322n	−5.40	0.7250n	−5.31
−0.074		+0.07		+0.07		+0.07		+0.07
−0.005		0.00		0.00		0.00		0.00
		−2.79		−2.49		−1.90		−1.36

20 Urs min Bep

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Jan 21		Jan 27	
9.8615		9.5799	
9.8032 n		9.7923 n	
0.7565		0.7377	
0.9674 n		1.0554 n	
1.2428		1.2113	
	−0.943		−0.927

0.6374 n	−4.34	0.6265 n	− 4.23
0.6763	+4.75	0.6575	+ 4.54
0.9065 n	− 8.10	0.9765 n	− 9.47
0.5763	+3.28	0.4648	+ 3.05
	−0.06		− 0.06
	−0.01		− 0.01
	−4.48		− 6.18

0.2361	+1.72	0.2252	+ 1.68
0.6538 n	− 4.51	0.6350 n	− 4.32
0.8660	+ 7.69	0.9540	+ 9.00
0.7040 n	− 5.06	0.6725 n	− 4.70
	+0.04		+ 0.07
	0.00		0.00
	−0.09		+1.73

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Antiroa +.60

	1863 Jan 14		1863 Jan 27		1863 Feb 19		1863 Feb 24	
	9.5337		9.5602		9.6451		9.6494	
	9.8184n		9.7921n		9.7469n		9.7435n	
	0.7479		0.7373		0.7255		0.7109	
	0.8887n		1.0562n		1.2140n		1.2331n	
	1.2701		1.2097		0.9993		0.9235	
		-0.961		-0.926		-0.863		-0.849
25 Camelop II								
Log a 1.1163	0.9347n	-860	0.9084n	- 8.10	0.8632n	-7.30		
" b 9.1430n	9.8909n	-0.78	9.8603n	- 0.76	9.8685n	- 0.74		
" c 9.1466n	0.0353	+ 1.08	0.2048	+ 1.60	0.3806	+ 2.29		
" d 9.7014	0.9715	+ 9.37	0.9111	+ 8.15	0.7007	+ 5.02		
μ +0.111		- 0.01		-0.01		-0.01		
ν +0.002		1.00		0.00		0.00		
		+ 1.06		+ 0.88		-0.74		

4 Ma mi 13

Log a 1.8445
" b 0.0988
" c 0.0988n
" d 0.5645

μ -0.017
ν +0.138

15b Camelop 13

Log a 1.1879
" b 9.4771n
" c 9.4792n
" d 9.7912

μ +0.009
ν +0.005

	0.9314n	- 8.54
	0.1880n	- 1.54
	0.7123	+5.16
	0.7147	+5.18
		-0.01
		0.00
		+0.25

4 Ma mi 13 ep

Log a 1.7565n
" b 0.2403
" c 0.2403
" d 0.4790n

-0.077
μ
ν +0.157

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1863phae.proj..115S

1864 Feb. 25	1864 Feb 26	1864 March 3	1864 March 7	1864 March 9
9.6495	9.6503	9.6677	9.6749	9.6752
9.7341n	9.7428n	9.7281n	9.7218n	9.7213n
0.7117	0.7137	0.7198	0.7070	0.7063
1.2365n	1.2397n	1.2556n	1.2632n	1.2661n
0.9062	0.8882	0.7565	0.6368	0.5607
−0.847	−0.844	−0.828	−0.817	−0.812

0.9597n	−7.24			0.8644n	−6.99		
9.8567n	−0.72			9.8628n	−0.73		
0.3831	+2.42			0.4022	+2.52		
0.6076	+4.05			0.4579	+2.67		
	−0.01				−0.01		
	0.00				0.00		
	−1.50				−2.34		

1.0080n	−40.36
0.6031n	−6.36
1.3649	+23.17
1.1252	+13.34
	+0.01
	+0.09
	−10.11

0.9313n	−8.54			0.9160n	−8.24	0.9097n	−8.12
0.1868n	−1.54			0.1969n	−1.57	0.1841n	−1.53
0.7157n	+5.20			0.7348	+5.43	0.7424	+5.52
0.6974	+4.98			0.5477	+3.53	0.4280	+2.68
	−0.01				−0.01		−0.01
	0.00				0.00		0.00
	+0.09				−0.86		−1.46

1.5013	+31.72	1.4866	+30.66
0.9540	+9.00	0.9601	+9.12
1.4800n	−30.20	1.4959n	−31.33
1.3672n	−23.29	1.2355n	−17.20
	+0.86		+0.06
	+0.11		+0.10
	−12.80		−8.59

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1863phae.proj..115S

Catrova +.50

	1864 Jan 21		1864 Jan 25		1864 Jan 27		1864 Feb 5	
	9.5624		9.5775		9.5801		9.6102	
	9.8027n		9.7938n		9.7922n		9.7726n	
	0.7562		0.7426		0.7374		0.7399	
	0.5896n		1.0364n		1.0572n		1.1341n	
	1.2620		1.2217		1.2103		1.1479	
		−0.963		−0.932		−0.926		−0.902
62 Lm mi 13 gr								
Log a 0.8330n	0.6357	+4.32			0.6352	+4.22		
" b 9.4636n	0.2198n	−1.66			0.2010n	−1.59		
" c 9.4665n	0.4561	+2.86			0.5237	+3.34		
" d 9.6956n	0.9374n	−8.66			0.9057n	−8.05		
μ +0.015		−0.01				−0.01		
ν −0.004		0.00				0.00		
		−3.15				−2.09		
Ellen mi 4 gr								
Log a 0.8078n								
" b 9.1033n								
" c 9.1073n								
" d 9.6795n								
μ +0.011								
ν −1.001								
by Calculg 1D								
57 Cygni H								
Log a 1.4865			1.2602n	−19.07	1.2787n	−19.00	1.2591n	−18.16
" b 9.3329n			0.0755n	−1.19	0.0703n	−1.18	0.0728n	−1.18
" c 9.3334n			0.3698	+2.04	0.3906	+2.46	0.4675	+2.93
" d 0.1367			1.3584	+22.82	1.3470	+22.23	1.2846	+19.26
μ −0.031				+0.03		+0.03		+0.03
ν +0.004				−0.01		−0.01		−0.01
				+4.92		+4.53		+2.87

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1864 Feb 8.		1864 Feb 18		1864 Feb. 23		1864 Feb 28		1864 Feb 29	
9.6192		9.6416		9.6494		9.6499		9.6558	
9.7663n		9.7496n		9.7435n		9.7431n		9.7382n	
0.7279		0.7290		0.7118		0.7131		0.7206	
1.1548n		1.2092n		1.2293n		1.2385n		1.2472n	
1.1223		1.0139		0.9417		0.6949		0.5358	
	−0.893		−0.886		−0.852		−0.845		−0.837
		✓				✓			
		0.5826	+3.82						
		0.1926n	−1.56						
		0.0757	+4.74						
		0.7093n	−5.12						
			−0.01						
			0.00						
			+1.87						
								✓	
		0.5574n	+3.61					0.5460	+3.51
		9.8323n	−0.68					9.8239n	−0.67
		0.3165	+2.07					0.3545	+2.26
		0.6902n	−4.93					0.5151n	−3.27
			−0.01						−0.01
			0.00						0.00
			+0.06						+1.82
	✓				✓		✓		
1.2528n	−17.90			1.2300n	−16.98	1.2296n	−16.97		
0.0808n	−1.15			0.0447n	−1.11	0.0460n	−1.11		
0.4882	+3.08			0.5627	+3.65	0.5719	+3.73		
1.2590	+18.16			1.0784	+11.98	1.0316	+10.75		
	+0.03				+0.03		+0.03		
	−0.01				−0.01		+0.01		
	+2.21				−2.44		−3.56		

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Pulcova +.42

	1864 Jan 25	1864 Jan 27	1864 Feb 5		1864 Feb 8	
	9.5774	9.5800	9.6099		9.6191	
	9.7939n	9.7923n	9.7728n		9.7664n	
	0.7431	0.7376	0.7401		0.7281	
	1.0355n	1.0563n	1.1335n		1.1562n	
	1.2221	1.2208	1.1486		1.1230	
	-0.932	-0.928	-0.902		-0.894	
Gr 527			✓		✓	
Log a 0.9080			0.6808n	-4.80	0.6744n	-4.73
" b 9.5194			0.2595	+1.82	0.2475	+1.77
" c 9.5249			0.6586n	-4.55	0.6791n	-4.79
" d 9.4038			0.5524	+3.57	0.5268	+3.36
μ +0.020				-0.02		-0.02
r -0.003				0.00		0.00
				-3.98		-4.41
323 Ophiuchi B						
Log a 1.2710						
" b 9.8056						
" c 9.8065						
" d 9.8916						
μ +0.164						
r -0.016						
57 Herculis B μ	✓		✓		✓	
Log 1.3659n	1.1598	+14.45	1.1582	+14.39	1.1387	+13.76
" b 0.0317n	0.7748n	-5.95	0.7693n	-5.88	0.7718n	-5.91
" c 0.0320n	1.0675	+11.68	1.0863	+12.25	1.1655	+14.64
" d 0.1177n	1.3398n	-21.87	1.3285n	-21.31	1.2663n	-18.46
μ +0.032		-0.03		-0.03		-0.03
r -0.039		-0.03		-0.03		-0.03
		-1.75		-0.61		+3.97
Gr 750.						
Log 1.2216						
" b 9.6141						
" c 9.6157						
" d 9.8324						
μ +0.006						
r -0.009						

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1863phae.proj..115S

1864 Jan 13	1864 Jan 16
9.6248	9.6414
9.7623n	9.7498n
0.7260	0.7292
1.1841n	1.2088n
1.0740	1.0150
-0.880	-0.866

X

1.0333n	-10.80
0.5316	+3.40
0.7706n	-9.79
0.9656	+9.24
	+0.14
	-0.01
	-7.82

X

0.9714n	-9.36
0.3433	+2.20
0.8245n	-6.68
0.8674	+7.03
	+0.00
	-0.01
	-6.82

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1863phae.proj..115S

Unknown +50

1864 March 3		1864 March 9		1864 March 12		1864 March 19	
9.6624		9.6752		9.6777		9.6941	
9.7284n		9.7215n		9.7192n		9.7038n	
0.7200		0.7061		0.7143		0.7144	
1.2553n		1.2660n		1.2695n		1.2731n	
0.7591		0.5646		0.6178		9.1059	
	−0.828		−0.812		−0.803		−0.784

Alnwick Sp

Log a	0.8078n				
" b	9.1032n				
" c	9.1074n				
" d	9.6793n				
μ	+0.011				
ν	−0.001				

				0.5278	+3.37
				9.8177n	−0.66
				0.3769	+2.38
				0.0971n	−1.25
					−0.01
					0.00
					+3.83

6γ Cancri B3

Log a	1.1879	1.2664	0.9163n		−8.35
" b	9.4771n	9.1442	0.1971n		−1.58
" c	9.4792n	9.1458	0.7345n		−5.43
" d	9.7912	9.0867	0.5503		+3.55
μ	+0.022	+0.009			−0.01
ν	−0.004	+0.005			0.00
					−11.72

				1.2060n	−16.07
				0.0396n	−1.10
				0.6000	+3.98
				0.7013	+5.03
					+0.03
					+0.01
					−8.12

				1.1883n	−15.43
				0.0479n	−1.12
				0.6071	+4.05
				9.3025	+0.20
					+0.02
					0.00
					−12.28

5ζ Cephei A

Log a	1.4645				
" b	9.3335n				
" c	9.3320n				
" d	0.1367				
μ	−0.031				
ν	+0.009				

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1863phae.proj..115S

Nova −.50

1863 Dec 21.4
9.6946
9.7033n
0.7103
1.2731n
9.7478n
−0.779

1.1878n −15.41
0.0438n −1.11
0.6071 +4.05
9.8845n −0.77
+0.02
0.00
−13.22

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1863phae.proj..115S

Pulkova +.67

12

	1864 Mch 7		Mch 3		Mch 7	Mch [illegible]	
	9.6749		9.6680		9.6749	9.6779	
	9.7218 m		9.7279 m			9.7196 m	
	0.7070		0.7176			0.7150	
	1.2633 m		1.2557 m			1.2697 m	
	0.6341		0.7547			0.6077	
		−0.816		−0.827			−0.803
74 Draconis 3p		x		x	x		x
0.5034 m	0.2252	+1.68	0.2313	+1.70		0.2225	+1.67
9.6079	0.1143	+1.30	0.1249	+1.33		0.1223	+1.33
9.4131	0.6774 m	−4.76	0.6688 m	−4.66		0.6828 m	−4.82
9.5002 m	0.1343 m	−1.36	0.2549 m	−1.80		9.9079 m	−0.81
+0.019		−0.02		−0.02			−0.02
+0.002		0.00		0.00			0.00
		−3.16		−3.45			−2.65
1 Draconis H		x			x		x
0.9641	0.6857 m	−4.86				0.6832 m	−4.82
9.5520 m	0.2590 m	−1.82				0.2690 m	−1.88
9.0563 m	0.8196	+6.60				0.8260	+6.70
9.4699	0.1240	+1.33				9.8976	+0.79
+0.005		0.00					0.00
+0.004		0.00					0.00
		+1.25					+0.62
19 Cygni B 3p							x
0.6546 m						0.3737	+2.37
9.6707						0.3557	+2.43
9.6733						0.9430 m	−8.77
9.5604 m						9.9881 m	−0.97
+0.010							−0.01
+0.004							0.00
							−4.95

30 Camelopardi

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Pleiades -33

Mch 14		Mch 16		Mch 19d		Mch 24d		Apr. 7d	
9.6829		9.6887		9.6942		9.6941		9.7168	
9.7145n		9.7090n		9.7037n		9.7038n		9.6804n	
0.7205		0.7211		0.7139		0.7152		0.7321	
1.2714n		1.2724n		1.2731n		1.2710n		1.2502n	
0.2674		0.0592		8.9370n		0.2260n		0.8111n	
	−0.797		−0.792		−0.784		−0.770		−0.729
						×			
						0.2072	+1.61		
						0.1225	+1.33		
						0.6841n	−4.83		
						9.7242	+0.53		
							−0.01		
							0.00		
							−1.37		
		×		×		×		×	
		0.6731n	−4.71	0.6678n	−4.65	0.6679n	−4.65	0.6445n	−4.41
		0.2731n	−1.88	0.2659n	−1.84	0.2672n	−1.85	0.2641n	−1.92
		0.8287	+6.74	0.8294	+6.75	0.8273	+6.72	0.8065	+6.40
		9.5491	+0.35	8.4289n	−0.03	9.7139n	−0.52	0.3010n	−2.00
			0.00		0.00		0.00		0.00
			0.00		0.00		0.00		0.00
			+0.50		+0.23		−0.30		−1.93

×	
0.3691	+2.34
0.3912	+2.46
9.9447n	−8.80
9.8678n	−0.70
	−0.01
	0.00
	−4.71

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Pulcova, +76 Pulcova – 24

	1864 March 16th		1864 March 24th		1864 Apr 21st		1864 Apr 22d	
	9.6490		9.6941		9.7370		9.7388	
	9.7087m		9.7038m		9.6573m		9.6551m	
	0.7210		0.7155		0.7564		0.7613	
	1.2725m		1.2716m		1.2006m		1.1958m	
	0.0473		0.2372m		1.0372m		1.0466m	
		-0.792		-0.770		-0.693		-0.691
34 Lyncis H ep					Apr 9th			
8.6232m					9.6767m			
9.6768					0.7417 0.4205			
9.6826					1.2457m 0.9713m			
9.1949m					0.8547m			
+0.006					+0.02			
+0.004					+2.63			
					-8.46			
					+1.12			
					-0.04			
					2.00			
					-4.69			
					Apr 16th 9.7355			
					9.6591m			
					0.7658			
					1.2217m			
					0.9725m			
					-0.707			
20 Lacertæ B ep					0.3729m -2.10			
0.6638	0.3725m	-2.36			0.1091m -2.87			
9.6633m	0.3643m	-2.42			0.8594 +7.75			
9.6677m	0.9402	+8.71			9.8620m -0.73			
8.8695	8.9368	+0.09			+0.04			
-0.047		+0.04			0.00			
+0.002		0.00			+2.39			
		+4.06						
39 Lyncis H ep								
8.5849m	8.2936	+0.02			8.2422	+0.02	8.2405	+0.02
0.0405	0.7615	+5.77			0.7969	+6.27	0.6018	+6.34
0.0413	1.3138m	-20.60			1.2419m	-17.45	1.2371m	-17.26
9.1914m	9.2387m	-0.17			0.2786	+1.69	0.2400	+1.74
+0.086		-0.07				-0.06		-0.06
+0.002		0.00				0.00		0.00
		-15.05				-9.53		-9.22
39 Lyncis B ep								
0.4603			0.1041m	-1.27	0.0576m	-1.14		
9.9738			0.6893	+4.69	0.7302	+5.37		
9.9748			1.2464m	-17.64	1.1754m	-14.98		
8.4456m			8.6760	+0.05	9.4830	+0.30		
+0.035				-0.03		-0.02		
-0.001				0.00		0.00		
				-14.00		-10.47		

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1864 Apr 28		1864 ~~Apr 30~~ May 1		1864 May 6		1864 May 9		1864 May 10	
9.7562		9.7594		9.7662		9.7748		9.7777	
9.6330n		9.6288n		9.6194n		9.6070n		9.6027n	
0.7720		0.7701		0.7873		0.7966		0.7973	
1.1637n		1.1514n		1.1093n		1.0867n		1.0761n	
1.1093n		1.1268n		1.1726n		1.1923n		1.1984n	
	−0.674		−0.669		−0.652		−0.644		−0.642
✓		✓		✓				✓	
8.2562	+0.02	8.2520	+0.02	8.2426	+0.02			8.2259	+0.02
0.4508	+2.82	0.4489	+2.81	0.4661	+2.92			0.4761	+2.99
0.8463n	−7.12	0.8340n	−6.82	0.7919n	−6.19			0.7587n	−5.74
0.3042	+2.02	0.3217	+2.10	0.3675	+2.33			0.3933	+2.47
	0.00		0.00		0.00				0.00
	0.00		0.00		0.00				0.00
	−2.16		−1.89		−0.92				−0.26
				✓					
				0.2832n	−1.92				
				0.4506n	−2.82				
				0.7770	+5.98				
				0.0621n	−1.15				
					+0.03				
					0.00				
					+0.12				
				✓					
				8.2043	+0.02				
				0.8278	+6.73				
				1.1506n	−14.15				
				0.3640	+2.31				
					−0.06				
					0.00				
					−5.15				
		✓				✓			
		0.0291n	−1.07	0.0197n	−1.05	0.00073n	−1.02		
		0.7439	+5.54	0.7611	+5.77	0.7704	+5.69		
		1.1262n	−13.37	1.0841n	−12.14	1.0596n	−11.47		
		9.5726	−0.37	9.6184	+0.42	9.6361	+0.43		
			−0.02		−0.02		−0.02		
			0.00		0.00		0.00		
			−8.55		−7.02		−6.19		

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Pallas ± 60
± 40

~~1863 Mai 21.0~~ 1863 Dec 21.0

9.6946
9.7033n
0.7102
1.2730n
9.7745n
−0.779

25 Camelot

log a	1.1163	0.8196n	−6.60
" b	9.1631n	9.8533n	−0.71
" c	9.1467n	0.4197	+2.63
" d	9.7014	9.7759n	−0.30
μ	+0.011		−0.01
ν	+0.012		0.00
			−4.99

Hilmar 13

156 Camelot 13

Hilda 10 Byr

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Uranus −19

	1864 März 24		1864 Apr 21		1864 Apr 22		1864 Apr 29	
	9.6942		9.7337		9.7329		9.7582	
	9.7037n		9.6570n		9.6550n		9.6306n	
	0.7157		0.7566		0.7615		0.7708	
	1.2716n		1.2004n		1.1956n		1.1574n	
	0.2365n		1.0378n		1.0492n		1.1186n	
		−0.770		−0.693		−0.691		−0.671
5 Um m B	x		x				√	
Log a 0.1897	9.8934n	−0.78	9.8467n	−0.70			9.8201n	−0.66
" b 0.1323n	0.8480n	−7.05	0.6989n	−7.74			0.9031n	−8.01
" c 0.1328n	1.4044	+25.37	1.3332	+21.54			1.2902	+19.57
" d 8.8623n	9.1188	+0.13	9.9201	+0.83			0.0009	+1.00
+0.300		−0.23		−0.21				−0.20
+0.001		0.00		0.00				000
		+17.44		+13.72				+11.65
6 Um m B					x			
Log a 8.2718n					7.9268	+0.01		
" b 0.3914n					1.1529n	−14.22		
" c 0.3915n					1.5871	+38.65		
" d 9.1880n					0.2372	+1.73		
μ −0.091						+0.06		
ν −0.006						000		
						+26.23		
13 Lepus B			x		x		√	
Log a 0.8344			0.4914n	−3.10	0.4594n	−3.09	0.4648n	−2.92
" b 9.9199			0.6765	+4.75	0.6814	+4.80	0.6907	+4.91
" c 9.9212			1.1216n	−13.23	1.1168n	−13.09	1.0786n	−11.99
" d 9.2739			0.3117n	−2.05	0.3231n	−2.10	0.3925n	−2.47
μ +0.068				−0.05		−0.05		−0.05
ν −0.006				0.00		000		0.00
				−13.68		−13.53		−12.52
24 Camelop B			x				x	
Log a ~~2.5018n~~ 0.4325n			0.0895	+1.23			0.0629	+1.18
" b ~~9.9703n~~ 9.8972n			0.6538n	−4.51			0.6680n	−4.65
" c ~~9.9001n~~ 9.8985n			1.0989	+12.56			1.0559	+11.37
" d ~~9.2570n~~ 9.4610n			0.4988	+3.15			0.5796	+3.81
μ −0.074				+0.05				+0.05
ν −0.005				0.00				0.00
				+12.48				+11.74

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Apr 30^h		May 3		May 4		May 5		May 6	
9.7565		9.7617		9.7627		9.7643		9.7663	
9.6280 n		9.6256 n		9.6243 n		9.6220 n		9.6193 n	
0.7701		0.7745		0.7784		0.7829		0.7875	
1.1571 n		1.1310 n		1.1239 n		1.1165 n		1.1089 n	
1.1272 n		1.1512 n		1.1588 n		1.1660 n		1.1724 n	
	-0.669		-0.660		-0.658		-0.655		-0.652
9.8183 n	-0.66								
0.9026 n	-7.99								
1.2839	+19.23								
0.0095	+1.02								
	-0.20								
	0.00								
	+11.40								
								7.8911	+0.01
								1.1769 n	-15.10
								1.5004	+31.65
								0.3804	+2.29
									+0.06
									0.00
									+18.91
		0.4600 n	-2.88	0.4567 n	-2.88			0.4537 n	-2.84
		0.6954	+4.95	0.6983	+4.99			0.7074	+5.10
		1.0522 n	-11.28	1.0451 n	-11.09			1.0301 n	-10.72
		0.4251 n	-2.66	0.4327 n	-2.71			0.4463 n	-2.80
			-0.04		-0.04				-0.04
			0.00		0.00				0.00
			-11.91		-11.73				-11.30
		0.0581	+1.14	0.0568	+1.14	0.0546	+1.13		
		0.6717 n	-4.70	0.6756 n	-4.74	0.6601 n	-4.79		
		1.0295	+10.70	1.0224	+10.53	1.0150	+10.35		
		0.6122	+4.09	0.6198	+4.17	0.6270	+4.24		
			+0.05		+0.05		+0.05		
			0.00		0.00		0.00		
			+11.28		+11.15		+10.98		

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Vesta – 33

	1863 Apr 15 La		1863 Apr 22 D		1863 Apr 27 Tu		1863 May 3	
Lyrae	9.7346		9.7386		9.7533		9.7616	
by (d–u)	9.6602u		9.6557u		9.6369u		9.6256u	
" B	0.7470		0.7608		0.7730		0.7740	
" C	1.2256u		1.1963u		1.1701u		1.1320u	
" D	0.9515u		1.0476u		1.0992u		1.1502u	
Σ		−0.710		−0.691		−0.677		−0.661
7h Draconis Ip		✗						
0.5035u	0.1637	+1.46						
9.4073	0.1543	+1.43						
9.4131	0.6389u	−4.35						
9.5002u	0.4567	+2.86						
+0.019		−0.01						
+0.002		1.00						
		+1.39						
1 Draconis H		✗		✗		✗		
0.9641	0.6243u	−4.21	0.6195u	−4.16	0.6010u	−3.99		
9.5520u	0.2990u	−1.99	0.3128u	−2.06	0.3250u	−2.11		
9.5563u	0.7821	+6.05	0.7526	+5.66	0.7264	+5.33		
9.4699	0.4464u	−2.60	0.5375u	−3.45	0.5891u	−3.88		
+0.015		0.00		0.00		0.00		
+0.004		0.00		0.00		0.00		
		−2.95		−4.01		−4.65		
11 Cephei B Ip		✗		✗				
0.6547u	0.3149	+2.07	0.3101	+2.04	0.2916	+1.96		
9.6707	0.4177	+2.62	0.4315	+2.70	0.4437	+2.75		
9.6734	0.6992u	−7.93	0.8697u	−7.41	0.8435u	−6.95		
9.5605u	0.5370	+3.44	0.6281	+4.25	0.6797	+4.78		
+0.010		−0.01		−0.01		−0.01		
+0.004		0.00		0.00		0.00		
		+0.19		+1.58		+2.53		
30 Camelopardi H								✗
0.9064							0.5342u	−3.42
9.7016u							0.4764u	−3.00
9.7055u							0.8375	+6.88
9.4022							0.5524u	−3.57
−0.036								+0.02
+0.005								0.00
								−3.09

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1864 May 5		May 6	
9.7640		9.7660	
9.6224u		9.6197u	
0.7823		0.7869	
1.1176u		1.1100u	
1.1650u		1.1720u	
	−0.655		−0.653

	x		x
0.5308u	− 3.39	0.5281u	− 3.38
0.4847u	− 3.05	0.4893u	− 3.08
0.8231	+ 6.69	0.8155	+ 6.54
0.5672u	− 3.69	0.5742u	− 3.75
	+ 0.02		+ 0.02
	0.00		0.00
	− 3.42		− 3.65

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Nicora −10

	18h 4m 20s		29m		May 3		May 5	
	9.7373		9.7583		9.7618		9.7644	
	9.6569n		9.6302n		9.6255n		9.6219n	
	0.7570		0.7707		0.7748		0.7837	
	1.2000n		1.1588n		1.1304n		1.1158n	
	1.0388n		1.1194n		1.1519n		1.1667n	
		−0.693		−0.671		−0.660		−0.655
29 Lyn m 13.								
527. γ.								
Log a 0.5968n	0.5537	+3.58	0.5270	+3.37	0.5223	+3.33		
" b 9.9593n	0.7163n	−5.20	0.7300n	−5.37	0.7341n	−5.42		
" c 9.9601n	1.1601	+14.46	1.1169	+13.09	1.0905	+12.32		
" d 9.7571n	0.7959	+6.25	0.8765	+7.52	0.9090	+8.11		
u −0.027		+0.02		+0.02		+0.02		
v −0.012		0.00		0.00		0.00		
		+19.11		+18.63		+18.36		
γ 527 ep								
Log a 0.9081	0.5650n	−3.64	0.5383n	−3.45	0.5336n	−3.42	0.5300n	−3.39
" b 9.5194	0.2764	+1.89	0.2901	+1.95	0.2942	+1.97	0.3028	+2.01
" c 9.5289	0.7249n	−5.31	0.6817n	−4.87	0.6553n	−4.57	0.6407n	−4.37
" d 9.4039	0.4527n	−2.77	0.5233n	−3.34	0.5556n	−3.59	0.5706n	−3.72
u +0.020		−0.01		−0.01		−0.01		−0.01
v −0.003		0.00		0.00		0.00		0.00
		−9.67		−9.66		−9.57		−9.48
57 Lyn m 13.								
Log a 1.3656n	1.0225	+10.53						
" b 0.0318n	0.7546n	−6.15						
" c 0.0321n	1.2321	+17.06						
" d 0.1173n	1.1561	+14.32						
u +0.032		−0.02						
v −0.039		−0.02						
		+35.72						
323 Aphn 13								
Log a 1.2712			0.9014n	−7.97				
" b 9.6053			0.5762	+3.77				
" c 9.6064			0.9632n	−9.20				
" d 9.8918			1.0112n	−10.26				
u +0.164				−0.11				
v −0.016				−0.01				
				−23.78				

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May 9 λ_1 A 9.6064w
a 0.7957
c 1.0836w
D 1.1972w

May 10		May 19		May 22		May 27		May 28	
9.7781		9.7898		9.7986		9.8128		9.8136	
9.6021w		9.5840w		9.5695w		9.5454w		9.5428w	
0.7973		0.8077		0.8176		0.8153		0.8148	
1.0749w		0.9807w		0.9417w		0.8650w		0.8476w	
1.1992w		1.2452w		1.2571w		1.2746w		1.2776w	
	−0.641		−0.617		−0.608		−0.595		−0.592
May 9									
+3.19						0.4422	+2.77	0.4396	+2.75
−5.70						0.7746w	−5.95	0.7741w	−5.94
+11.06						0.8251w	+16.72	0.8077w	+6.42
+8.92						1.0317	+10.76	1.0343	+10.83
+0.02							+0.02		+0.02
0.00							0.00		0.00
+17.49							+14.37		+14.08
0.5102w	−3.24	0.4921w	−3.11	~~0.4776w~~		0.4535w	−2.84	0.4509w	−2.82
0.3167	+2.17	0.3271	+2.12			0.3347	+2.16	0.3342	+2.16
0.5998w	−3.98	0.5056w	−3.20			0.3699w	−2.46	0.3725w	−2.36
0.6031w	−4.01	0.6491w	−4.46			0.6785w	−4.77	0.6815w	−4.80
	−0.01		−0.01				−0.01		0.01
	0.00		0.00				0.00		0.00
	−9.07		−8.66				−7.92		−7.83
				0.9351	+8.61				
				0.8494w	−7.07				
				0.9738	+9.41				
				1.3747	+23.70				
					−0.02				
					−0.01				
					+34.62				
0.8733w	−7.47	0.8552w	−7.17	0.8407w	−6.93	0.8166w	−6.56	0.8140w	−6.52
0.6028	+4.01	0.6132	+4.10	0.6231	+4.20	0.6208	+4.28	0.6203	+4.17
0.8813w	−7.61	0.7871w	−6.13	0.7481w	−5.60	0.6714w	−4.69	0.6540w	−4.51
1.0910w	−12.33	1.1370w	−13.71	1.1492w	−14.10	1.1664w	−14.67	1.1694w	−14.77
	−0.11		−0.10		−0.10		−0.10		−0.10
	−0.01		−0.01		−0.01		−0.01		−0.01
	−23.52		−23.02		−22.54		−21.75		−21.74

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Pulcova -03

	1864 Apr 21		1864 May 19		1864 May 22		May 27	
	9.7374		9.7899		9.7988		9.8123	
	9.6568m		9.5638m		9.5691m		9.5452m	
	0.7574		0.8060		0.8177		0.8152	
	1.1996m		0.9799m		0.9707m		0.8636m	
	1.0396m		1.2455m		1.2577m		1.2748m	
		-0.693		-0.616		-0.608		-0.594
Fr 750 ep.	x		x		x		x	
1.2217	0.8785m	-7.56	0.8055m	-6.39	0.7908m	-6.18	0.7669m	-5.85
9.6160	0.3714	+2.35	0.4220	+2.64	0.4317	+2.70	0.4292	+2.69
9.6156	0.8152m	-6.54	0.5955m	-3.94	0.5563m	-3.60	0.4794m	-3.02
9.8325	0.8721n	-7.45	1.0760m	-11.97	1.0902m	-12.31	1.1073m	-12.60
+0006		+0.00		0.00		0.00		1.00
-0.009		0.00		0.00		0.00		0.00
		-19.20		-19.66		-19.39		-18.98
62 Mus m B	x		x				x	
0.8329m	0.4897	+3.09	0.4167	-2.61	0.4020		0.3781	+2.39
9.4637m	0.2271m	-1.67	0.2717m	-1.87	0.2814m		0.2769m	-1.90
9.4666m	0.6662	+4.63	0.4465	+2.70	0.4073		0.3304n	+2.14
9.6953m	0.7349	+5.43	0.9408	+8.72	0.9530		0.9701	+9.34
+0.015		-0.01		-0.01				-0.01
-1.004		0.00		0.00				0.00
		+11.47		+12.15				+11.96
Ellsa minor.								
0.8077m								
9.1034m								
9.1074m								
9.6793m								
+0.011								
-0.001								
64 Cam B?								
1.2664								
9.1421								
9.1437								
9.8668								
+0.022								
-0.003								

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May 31		June 4		June 7		June 10		June 25	
9.8170		9.6263		9.8352		9.8406		9.8207	
9.5364n		9.5181n		9.4994n		9.4874n		9.5292n	
0.8200		0.6332		0.8341		0.8295		0.6273	
0.7882n		0.6946n		0.6064n		0.4943n		0.7491n	
1.2659n		1.2949n		1.3003n		1.3045n		1.2907n	
	−0.584		−0.573		−0.586		−0.556		−0.578
0.7581n	−5.73	0.7398n	−5.40	0.7211n	−5.26	0.7091n	−5.12	0.7509n	−5.64
0.4340	+2.72	0.4472	+2.60	0.4481	+2.71	0.4435	+2.78	0.4413	+2.76
0.4038n	−2.53	0.3100n	−2.04	0.2220n	−1.67	0.1099n	−1.29	0.3597n	−2.29
1.1164n	−13.13	1.1274n	−13.41	1.1328n	−13.58	1.1370n	−13.71	1.1232n	−13.28
	0.00		0.00		0.00		0.00		1.00
	0.00		0.00		0.00		0.00		0.00
	−18.67		−18.05		−17.80		−17.34		−18.45
0.3693	+2.34	0.3510	+2.24	0.3323	+2.25	0.3203	+2.09	0.3621	+2.30
0.2837n	−1.92	0.2969n	−1.98	0.2978n	−1.98	0.2932n	−1.96	0.2910n	−1.95
0.2648n	+1.80	0.1610	+1.45	0.0730	+1.19	9.9609	+0.91	0.2107n	+1.63
0.9812	+9.58	0.9902	+9.78	0.9956	+9.90	0.9998	+10.00	0.9860	+9.68
	−0.01		−0.01		−0.01		−0.04		−0.01
	0.00		0.00		0.00		0.00		0.00
	+11.79		+11.48		+11.35		+11.03		+11.65
						0.2951	+1.97		
						9.9329n	−0.86		
						9.6817	+0.40		
						0.9838	+9.63		
							−0.01		
							0.00		
							+11.13		
						0.7538n	−5.67		
						9.9716	+0.94		
						9.6380n	−0.43		
						1.1913n	−15.53		
							−0.01		
							0.00		
							−20.70		

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Polaris -19

	1864 May 9		1864 May 10		1864 May 18th		1864 May 19th	
	9.7749		9.7779		9.7880		9.7896	
	9.6069n		9.6024n		9.5668n		9.5643n	
	0.7967		0.7973		0.8031		0.8073	
	1.0863n		1.0757n		0.9937n		0.9818n	
	1.1926n		1.1987n		1.2404n		1.2448n	
		-0.644		-0.641		-0.618		-0.617
5 Ursae Min B								
log a 0.1887	9.7956n	-0.62						
" b 0.1322n	0.9289n	-8.49						
" c 0.1327n	1.2170	+16.48						
" d 8.8823n	0.0749	+1.19						
μ		+0.300		-0.19				
r		+0.001		0.00				
				+8.37				
6 Ursae Min B								
log a 8.2529n					7.8397	+0.01		
" b 0.3912n					1.1943n	-15.64		
" c 0.3913n					1.3850	+24.27		
" d 9.1879n					0.4263	+2.68		
μ		-0.091				+0.06		
r		-0.006				0.00		
						+11.38		
43 Ceph Nop								
log a 0.8344			0.4368n	-2.73			0.4187n	-2.62
" b 9.9199			0.7172	+5.21			0.7272	+5.21
" c 9.9212			0.9969n	-9.93			0.9030n	-8.00
" d 9.2740			0.4727n	-2.97			0.5186n	-3.30
μ		+0.068		-0.04				-0.04
r		-0.006		0.00				0.00
				-10.46				-8.75
214 Camel N								
log a 0.5325n					0.0193	+1.05		
" b 9.8972n					0.7003n	-5.02		
" c 9.8985n					0.6922	+7.90		
" d 9.4610n					0.7014	+5.03		
μ		-0.074				+0.05		
r		+0.005				0.00		
						+9.01		

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1863phae.proj..1155

1863 May 22		1863 May 23.5		May 27		May 29		May 31	
9.7983		9.6017		9.8121		9.8146		9.8167	
9.5700 n		9.5642 n		9.5456 n		9.5409 n		9.5369 n	
0.8174		0.8187		0.8154		0.8152		0.8195	
0.9429 n		0.9289 n		0.8665 n		0.8309 n		0.7915 n	
1.2571 n		1.2606 n		1.2743 n		1.2603 n		1.2855 n	
	−0.609		−0.606		−0.895		−0.590		−0.584
				9.7343 n	−0.54				
				0.9476 n	−8.86				
				0.9992	+9.98				
				0.1566	+1.43				
					−0.27				
					0.00				
					+1.74				
7.8229	+0.01					7.7938	+0.01		
1.2086 n	−16.16					1.2064 n	−16.09		
1.3342	+21.59					1.2222	+16.68		
0.4450	+2.69					0.4682	+2.94		
	+0.06						+0.05		
	0.00						0.00		
	+8.19						+3.59		
0.4044 n	−2.53	0.3986 n	−2.50			0.3753 n	−2.37	0.3713 n	−2.35
0.7373	+5.46	0.7366	+5.38			0.7351	+5.43	0.7394	+5.49
0.8641 n	−7.31	0.8501 n	−7.08			0.7521 n	−5.65	0.7127 n	−5.16
0.5311 n	−3.40	0.5348 n	−3.42			0.5543 n	−3.58	0.5595 n	−3.63
	−0.04		−0.04				−1.04		−0.04
	0.00		0.00				0.00		0.00
	−7.82		−7.66				−6.11		−5.69
				9.9781	+0.95	9.9734	+0.94	9.9694	+0.93
				0.7126 n	−5.16	0.7127 n	−5.16	0.7167 n	−5.21
				0.7650	+5.82	0.7294	+5.36	0.6900	+4.90
				0.7353	+5.44	0.7413	+5.51	0.7465	+5.58
					+0.04		+0.04		+0.04
					0.00		0.00		0.00
					+7.09		+6.69		+6.24

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Polaris -.24

	1864 May 18 Tm		1864 May 19 Tm		1864 May 22 Tm	
	9.7879		9.8695		9.7981	
log A	9.5870w		9.5844w		9.5703w	
" B	0.8029		0.8071		0.8173	
" C	0.9943w		0.9824w		0.9436w	
" D	1.2402w		1.2446w		1.2569w	
c-1		-0.620		-0.617		-0.609

202 Lacaille B

log a 0.6637			0.2481w	-1.77	0.2340w	-1.72
" b 9.6633w			0.4704w	-2.95	0.4806w	-3.02
" c 9.6677w			0.6501	+4.47	0.6113	+4.08
" d 8.8694			0.1340w	-1.36	0.1463w	-1.40
μ -0.047				+0.03		+0.03
ν +0.002				0.00		0.00
				-1.58		-2.02

Agelaus Hyp

log a 8.5899w	8.1769	+0.02	8.1743	+0.01		
" b 0.4406	0.8435	+6.98	0.8477	+7.04		
" c 0.4414	1.0357w	-10.85	1.0238w	-10.56		
" d 9.1915w	0.4317	+2.70	0.4361	+2.73		
μ +0.086		-0.05		-0.05		
ν +0.002		0.00		0.00		
		-1.20		-0.84		

Ag Eglis Byz

log a 0.4003	9.9873w	-0.97			9.9706w	-0.93
" b 9.9738	0.7767	+5.98			0.7911	+6.18
" c 9.9748	0.9691w	-9.30			0.9184w	-8.29
" d 8.4456w	9.6858	+0.48			9.7025	+0.50
μ +0.235		-0.02				-0.02
ν -0.001		0.00				0.00
		-3.83				-2.56

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Pulcova −.10

	1864 May 29		May 31		June 2		June 4	
	9.8146		9.8169		9.8206		9.8261	
	9.5409n		9.5366n		9.5294n		9.5185n	
	0.8153		0.8198		0.8270		0.8331	
	0.8294n		0.7897n		0.7457n		0.6962n	
	1.2805n		1.2656n		1.2906n		1.2948n	
		−0.589		−0.586		−0.579		−0.573
20 Una mi 13		✓		✓				
0.8967n	0.4376	+2.74	0.4333	+2.71	~~0.4261~~		~~0.4~~	
9.9593n	0.7746n	−5.95	0.7791n	−6.01				
9.9601n	0.7695	+6.16	0.7498	+5.62				
9.7571n	1.0376	+10.90	1.0429	+11.04				
−0.027		+0.02		+0.02				
−0.012		0.00		0.00				
		+13.87		+13.38				
Lr 527 m				✓		✓		
0.9061			0.4457n	−2.79	0.1375n	−2.74		
9.5194			0.3392	+2.18	0.3464	+2.22		
9.5249			0.3146n	−2.06	0.2706n	−1.86		
9.4040			0.6898n	−4.90	0.6946n	−4.95		
+0.020				−0.01		−0.01		
−0.003				0.00		0.00		
				−7.58		−7.34		
37 Una mi 13							✓	
1.3653n							0.8838	+7.65
0.0318n							0.8649n	−7.33
0.0321n							0.7283	+5.35
0.1172n							1.4120	+25.82
+0.032								−0.02
−0.039								−0.01
								+31.46
323 Leptus B op				✓		✓		
1.2713			0.8079n	−6.43	0.8007n	−6.32		
9.8055			9.6253	+4.22	0.6325	+4.29		
9.8062			0.5961n	−3.94	0.5521n	−3.56		
9.8919			1.1777n	−15.06	1.1825n	−15.22		
+0.164				−0.10		−0.10		
−0.016				−1.01		−0.01		
				−21.32		−20.92		

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June 6	June 7	June 8	June 13	June 14
9.8323	9.8350	9.8374	9.8430	9.8441
9.5056 n	9.4998 n	9.4946 n	9.4620 n	9.4794 n
0.8349	0.8342	0.8328	0.8308	0.8333
0.6599 n	0.6086 n	0.5746 n	0.3456 n	0.2804 n
1.2985 n	1.3001 n	1.3017 n	1.3075 n	1.3083 n
−0.567	−0.565	−0.562	−0.548	−0.545

		0.3965	+2.49						
		0.7935 n	−6.20						
		0.5687	+3.70						
		1.0572	+11.41						
			+0.02						
			0.00						
			+11.42						
0.4137 n	−2.59	0.4079 n	−2.56						
0.3543	+2.26	0.3536	+2.26						
0.1648 n	−1.46	0.1335 n	−1.36						
0.7025 n	−5.04	0.7041 n	−5.06						
	−0.01		−0.01						
	0.00		0.00						
	−6.84		−6.73						
		0.8651	+7.33	0.8599	+7.24	0.8473	+7.04	1.8447	+6.99
		0.8660 n	−7.34	0.8646 n	−7.32	0.8626 n	−7.29	0.8651 n	−7.33
		0.6407	+4.37	0.6067	+4.04	0.3779	+2.39	0.3125	+2.05
		1.4173	+26.14	1.4189	+26.24	1.4247	+26.39	1.4285	+26.64
			−0.02		−0.02		−0.02		−0.02
			−0.01		−0.01		−0.01		−0.01
			+30.47		+30.17		+28.70		+28.32
0.7769 n	−5.98			0.7659 n	−5.83				
0.6404	+4.37			0.6363	+4.35				
0.4463 n	−2.79			0.3810 n	−2.40				
1.1904 n	−15.50			1.1936 n	−15.62				
	−0.09				−0.09				
	−0.01				−0.01				
	−20.00				−19.60				

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Pulcova – 17

	1864 June 2.	4	7	8
	9.8204	9.8259	9.8349	9.8372
	9.9298 n	9.9189 n	9.9060 n	9.4950 n
	0.8268	0.8329	0.8343	0.8329
	0.7475 n	0.6980 n	0.6108 n	0.5771 n
	1.2903 n	1.2947 n	1.3000 n	1.3016 n
	−0.579	−0.573	−0.565	−0.562

5 Un mit B

6 Un mit B

43 Ophiuchi

		x	x	x	
Log a	0.8304	0.3642 n	−2.31	0.3533 n	−2.26	0.3344 n	−2.16	
" b	9.9199	0.7467	+5.58	0.7528	+5.66	0.7542	+5.58	
" r	9.9212	0.6687 n	−4.65	0.6192 n	−4.16	0.5320 n	−3.40	
" r'	9.2741	0.5644 n	−3.67	0.5688 n	−3.71	0.5741 n	−3.75	
μ	+0.068		−0.04		−0.04		−0.04	
ν	−0.006		0.00		0.00		0.00	
			−5.09		−4.81		−3.77	

214 Camelopardi B

		x		x	
Log a	0.8324 n	9.9624	+0.92	9.9324	9.9274	+0.85
" b	9.8972 n	0.7240 n	−5.30	0.7315 n	0.7301 n	−5.37
" r	9.8965 n	0.6480	+4.43	0.5793	0.4756	+2.99
" r'	9.4609 n	0.7512	+5.64	0.7609	0.7625	+5.79
μ	−0.074		+0.04			+0.04
ν	−0.005		0.00			0.00
			+5.73			+4.30

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10		13		14	
9.8404		9.8429		9.8440	
9.4879n		9.4822n		9.4797n	
0.8297		0.8307		0.8331	
0.5001n		0.3581n		0.2622n	
1.3043n		1.3074n		1.3083n	
	-0.557		-0.548		-0.526

0.3223n	-2.10			0.3141n	-2.06
0.7496	+5.62			0.7530	+5.66
0.4213n	-2.64			0.1834n	-1.52
0.5784n	-3.79			0.5824n	-3.82
	-0.04				-0.04
	0.00				0.00
	-2.95				-1.78
9.9203	+0.83	9.9146	+0.83		
0.7269n	-5.34	0.7279n	-5.35		
0.3986	+2.58	0.2486	+1.77		
0.7652	+5.82	0.7683	+5.87		
	+0.14		+0.04		
	0.00		0.00		
	+3.85		+3.16		

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Outcrop +08

	1863 June 6	June 14th	June 21st	June 23d
	9.8328	9.8443	9.8632	9.8673
	9.5045n	9.4790n	9.4317n	9.4206n
	0.8348	0.8338	0.8421	0.8379
	0.6346n	0.3674n	9.5146	9.9777
	1.2988n	1.3085n	1.3105n	1.3101n
	−0.567	−0.545	−0.526	−0.520

51 Lyrae Hyp

Log a	1.5844					
" b	9.3362n	0.9634n	−9.29	9.9161n	−8.24	9.9068n −8.03
" c	9.3358n	0.1680n	−1.47	0.1763n	−1.50	0.1721n −1.49
" δ	0.1366	9.6022	+0.40	8.8694n	−0.07	9.3125n −0.21
μ	−0.031	1.4451n	+27.87	1.4471n	−28.00	1.4467n +27.97
ν	+1.009		+0.02		+0.02	+0.02
			0.00		0.00	0.00
			−38.11		−37.79	−37.68

25 Lacertae Hyp

4 Herculis Hyp

156 Camelopardalis

Log a	1.1878	0.6923n	−4.92
" b	9.4774n	0.3122n	−2.05
" c	9.4795n	0.1139	+1.30
" δ	9.7911	1.0899n	−12.30
	+0.009		−0.01
	+0.005		0.00
			−27.98

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1863phae.proj..1155

July 3d		July 5 Tu		July 9 W		July 13 Tu		July 14 Th	
9.8976		9.8903		9.8945		9.8989		9.9010	
9.3647 w		9.3487 w		9.3338 w		9.3174 w		9.3093 w	
0.8467		0.8429		0.8350		0.8406		0.8424	
0.6052		0.6660		0.7656		0.6451		0.8626	
1.3004 w		0.2969 w		1.2885 w		1.2760 w		1.2754 w	
	−0.493		−0.488		−0.477		−0.466		−0.463
	X		X		X		X		X
0.8491 w	−7.06	0.8331 w	−6.81	0.8182 w	−6.58	0.6016 n	−6.34	0.7937 w	−6.22
0.1809 w	−1.52	0.1771 w	−1.50	0.1692 w	−1.48	0.1748 w	−1.50	0.1766 w	−1.51
9.9400 w	−0.87	0.0008 w	−1.00	0.1004 w	−1.26	0.1799 w	−1.51	0.1974 w	−1.56
1.4370 w	−27.35	1.4335 w	−27.13	1.4281 w	−26.61	1.4146 w	−25.98	1.4117 w	−25.80
	+0.02		+0.02		+0.01		+0.01		+0.01
	0.00		0.00		0.00		0.00		0.00
	−36.78		−36.42		−35.92		−35.32		−35.07

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1863phae.proj..115S

Polaris +.15

	1864 June 6		1864 Aug 18		July 29		Aug 12	
	9.8330		9.9113		9.9864		9.9326	
	9.5041n		9.2665n		9.1928n		9.1526n	
	0.8348		0.8398		0.8352		0.8298	
	0.6323n		0.9263		1.0548		1.0820	
	1.2989n		1.2614n		1.2117n		1.1943n	
		−0.567		−0.452		−0.422		−0.414
Alpha B	x		x		x			
1.7592n	1.2633	+18.31	1.0257	+10.61	0.9520	+8.95		
0.2396	1.0744	+11.87	1.0794	+12.01	1.0748	+11.88		
0.2396	0.8719n	−7.46	1.1659	+14.65	1.2944	+19.70		
0.1797n	1.7786	+60.05	1.7411n	+55.09	1.6914	+49.13		
−0.077		+0.04		+0.03		+0.03		
+0.157		+0.05		+0.03		+0.03		
		+~~83.76~~ 82.86		+92.42		+89.72		
74 Draconis	x							
0.5036n	0.0087	+1.02						
9.4073	0.2421	+1.74						
9.4131	0.0454n	−1.11						
9.5005n	0.7992	+6.30						
+0.019		−0.01						
+0.002		0.00						
		+7.94						
1 Draconis	x						✓	
0.9640	0.4681n	−2.97					0.1216n	−1.32
9.5520n	0.3868n	−2.44					0.3618n	−2.41
9.5563n	0.1866	+1.54					0.6383n	−4.35
9.4698	0.7887n	−6.15					0.6841n	−4.83
+0.005		0.00						0.00
+0.004		000						0.00
		−9.99						−12.91
117 Ophi B							✓	
0.6549n							9.8125	−0.65
9.6307							9.5005	+3.17
9.6734							0.7554	+5.69
9.5506n							0.7749	+5.95
+0.010								0.00
+0.004								0.00
								+15.46

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Sept. 2d | Sept. 7th | Sept. 9th | Sept. 10th | Sept. 15

Q. 9643
8.6977 n
0.7993
1.2483
0.8272 n
− 0.326

0.6564 +6.53
1.0389 +10.94
1.4879 +30.75
1.3069 +20.27

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Ursae −.02

	1864 June 12		June 14		June 16		June 17	
	9.8431		9.8462		9.8480		9.8506	
	9.4818n		9.4792n		9.4703n		9.4620n	
	0.6310		0.6335		0.6396		0.6423	
	0.3406n		0.2746n		0.1007n		9.9777n	
	1.3076n		1.3088n		1.3096n		1.3100n	
		−0.568		−0.565		−0.570		−0.537
5n. 750 ep								
by a 1.2717	0.7135n	−5.05	0.7009n	−5.02	0.6920n	−4.92	0.6857n	−4.85
" b 9.6139	0.4449	+2.78	0.4474	+2.80	0.4535	+2.84	0.4562	+2.86
" c 9.6155	9.9563n	−0.90	9.6901n	−0.78	9.7162n	−0.52	9.5932n	−0.39
" d 9.8326	1.1402n	−13.81	1.1410n	−13.84	1.1422n	−13.87	1.1426n	−13.89
μ +0.006		0.00		0.00		0.00		0.00
ν −0.009		0.00		0.00		0.00		0.01
		−16.98		−16.84		−16.47		−16.27

62 Leo min 13

Ursae min

by a 0.8078n			0.2870	+1.93	0.2781	+1.89	0.2718	+1.87
" b 9.1036n			9.9371n	−0.86	9.9232n	−0.88	9.9459n	−0.88
" c 9.1075n			9.3821	+0.24	9.2082	+0.16	9.0852	+0.12
" d 9.1743			0.9877	+9.72	0.9889	+9.75	0.9893	+9.76
μ +0.011				−0.01		−0.01		−0.01
ν −0.007				0.00		0.00		0.00
				+11.02		+10.91		+10.86
64 Camel B								
by a 1.2664			0.7456n	−5.57	0.7367n	−5.45		
" b 9.1433			9.9718	+0.98	9.9829	+0.96		
" c 9.1449			9.4195n	−0.26	9.2456n	−0.14		
" d 9.8668			1.1952n	−15.67	1.1964n	−15.72		
μ +0.022				−0.01		−0.01		
ν −0.003				0.00		0.00		
				−20.53		−20.40		

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June 18th		June 21st		June 22d		June 24th		June 30th	
9.8537		9.8629		9.8653		9.8686		9.8772	
9.4864n		9.4325n		9.4260n		9.4167n		9.3914n	
0.8440		0.8423		0.8402		0.8364		0.8445	
9.8055n		9.4713		9.7832		0.0696		0.4889	
1.3103n		1.3105n		1.3104n		1.3097n		1.3046n	
	−0.534		−0.526		−0.523		−0.518		−0.502
✓		✓		✓				✓	
0.6781n	−4.77	0.6542n	−4.55	0.6477n	−4.44	0.6384n	−4.35	0.6131n	−4.10
0.4579	+2.87	0.4562	+2.86	0.4541	+2.86	0.4503	+	0.4584	+2.87
9.4210n	−0.26	9.0868	+0.12	9.3987	+0.25	9.7051		0.1044	+1.27
1.1429n	−13.90	1.1431n	−13.90	1.1430n	−13.90	1.1423n		1.1372n	−13.72
	0.00		0.00		0.00				0.00
	0.00		0.01		0.00				0.00
	−16.06		−15.43		−15.23				−13.68
				✓		✓			
0.2642	+1.84			0.2338	+1.71	0.2245	+1.68		
9.9476n	−0.89			9.9456n	−0.88	9.9400n	−0.87		
8.9130	+0.08			8.8907n	−0.08	9.1971n	−0.16		
0.9896	+9.76			0.9897	+9.77	0.9890	+9.75		
	−0.01				−0.01		−0.01		
	0.00				0.00		0.00		
	+10.78				+10.57		+10.39		
		✓				✓			
0.7		0.6989n	−5.00			0.6831n	−4.82		
		9.9856	+0.97			9.9797	+0.96		
		8.6162	+0.04			9.2345	+0.17		
		1.1973n	−15.75			1.1973n	−15.72		
			−0.01				−0.01		
			0.00				0.00		
			−19.75				−19.42		

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Ontrova −.10

	1864 Jan 16		Jan 17		Jan 18		Jan 21	
	9.8478		9.8504		9.8535		9.8627	
	9.4708n		9.4645n		9.4569n		9.4380n	
	0.5394		0.8420		0.8438		0.8425	
	0.1092n		9.9690n		9.8221n		9.4330	
	1.3096n		1.3100n		1.3103n		1.3105n	
		−0.540		−0.537		−0.535		−0.526
20 Minna 13								
Lyr a	0.6966n	0.3674	+2.33		0.3535	+2.26	0.3296	+2.14
" b	9.9592n	0.7986n	−6.29		0.6030n	−6.35	0.6017n	−6.34
" c	9.9600n	0.0692	+1.17		9.7821	+0.61	9.3930n	−0.75
" d	9.7572n	1.0668	+11.66		1.0675	+11.68	1.0677	+11.69
	−0.127		+0.01			+0.01		+0.01
	−0.012		0.00			0.00		0.00
			+8.88			+6.21		+7.25
Lyr 527 1p								
Lyr a	0.9081							
" b	9.5194							
" c	9.5269							
" d	9.4040							
μ	+0.020							
r	−0.003							
57 Urs min 13								
Lyr a	1.3653n	0.8361	+6.86	0.8296	+6.76		0.7983	+6.28
" b	0.0318n	0.8712n	−7.43	0.8738n	−7.48		0.8743n	−7.49
" c	0.0321n	0.1413	+1.39	0.0211	+1.05		9.4657n	−0.29
" d	0.1172n	1.4268	+26.72	1.4272	+26.74		1.4277	+26.77
μ	+0.032		−0.02		−0.02			−0.02
r	−0.039		−0.01		−0.01			−0.01
			+27.51		+27.04			+25.24

323 Cephei By

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June 22d	June 27th	June 28th	June 29th	July 3d
9.3651	9.8717	9.8730	9.8748	9.8661
9.4265n	9.4079n	9.4041n	9.3987n	9.3664n
0.8404	0.8371	0.8393	0.8418	0.8468
9.7849	0.3290	0.3877	0.4394	0.5993
1.3104n	1.3078n	1.3066n	1.3059n	1.3007n
-0.524	-0.510	-0.507	-0.505	-0.494

0.3346n	-2.16	0.3166n	-2.07						
0.3598	+2.29	0.3565	+2.27						
9.2698	+0.19	9.6539	+0.71						
0.7144n	-5.18	0.7116n	-5.15						
	-0.01		-0.01						
	0.00		-0.00						
	-4.87		-4.25						
		0.7732	+5.93	0.7694	+5.88	0.7640	+5.81	0.7317	+5.39
		0.8689n	-7.39	0.8711n	-7.43	0.8736n	-7.48	0.8786n	-7.50
		0.3611n	-2.30	0.4148n	-2.63	0.4715n	-2.96	0.6314n	-4.28
		1.4250	+26.61	1.4241	+26.55	1.4231	+26.49	1.4179	+26.18
			-0.02		-0.02		-0.02		-0.02
			-0.01		-0.01		-0.01		-0.01
			+22.82		+22.34		+21.83		+19.70

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Uranus −.03

	July 3 d	July 4 m	July 6 m	July 8 m
1864	9.8653	9.8878	9.9917	9.8999
	9.3657n	9.3578n	9.3438n	9.3380n
	0.8468	0.8455	0.8405	0.8360
	0.6017	0.6335	0.6904	0.7404
	1.3005n	1.2989n	1.2953n	1.2911n
	−0.493	−0.491	−0.465	−0.480
Eri 7511 zp	✓	✓	✓	✓
Ia 1.2218	0.5875n −3.87	0.5791n −3.80	0.5656n −3.68	0.5578n −3.61
16 9.6139	0.4607 +2.89	0.4594 +2.88	0.4564 +2.85	0.4499 +2.82
20 9.6155	0.2172 +1.65	0.2490 +1.78	0.3059 +2.02	0.3559 +2.27
23 9.8326	1.1331n −13.59	1.1315n −13.54	1.1279n −13.42	1.1237n −13.30
+0.006	0.00	0.00	0.00	0.00
−0.009	0.00	0.00	0.00	0.00
	−12.92	−12.68	−12.23	−11.62
62 Urs min B			✓	✓
Iya 0.6326n			0.1766 +1.50	0.1788 +1.51
16 9.4637n			0.3042n −2.02	0.2997n −1.99
20 9.4666n			0.1570n −1.44	0.2070n −1.61
23 9.6953n			0.9906 +9.39	0.9864 +9.39
+0.015			−0.01	−0.01
−0.004			0.00	0.00
			+7.82	+7.59
ε Ursae min	✓	✓		
Iya 0.8077n	0.1734 +1.49	0.1650 +1.46		
16 9.1036n	9.9504n −0.89	9.9491n −0.89		
20 9.1076n	9.7093n −0.51	9.7411n −0.55		
23 9.6393n	0.9798 +9.55	0.9782 +9.54		
μ +0.011	−0.01	−0.01		
r −0.001	0.00	0.00		
	+9.63	+9.52		
61 Cygni 12m	✓	✓		
Iya 1.2664	0.6321n −4.29	0.6237n −4.20		
16 9.1426	9.9894 +0.97	9.9881 +0.97		
20 9.1442	9.7459 +0.56	9.7777 +0.60		
23 9.8868	1.1673n −15.39	1.1657n −15.34		
μ +0.022	−0.01	−0.01		
r −0.003	−0.00	0.00		
	−18.16	−17.98		

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July 9		July 10		July 12		July 13		July 14	
9.8945		9.8959		9.8970		9.8986		9.9007	
9.3338n		9.3320n		9.3246n		9.3185n		9.3105n	
0.8350		0.8352		0.8382		0.8403		0.8422	
0.7632		0.7648		0.8267		0.8432		0.8608	
1.2888n		1.2864n		1.2812n		1.2783n		1.2754n	
	−0.427		−0.474		−0.469		−0.464		−0.463
0.5556n	−3.60			0.5664n	−3.52	0.5403n	−3.47		
0.4489	+2.81			0.4521	+2.83	0.4542	+2.85		
0.3787	+2.39			0.4402	+2.76	0.4587	+2.88		
1.1214n	−13.23			1.1138n	−13.00	1.1109n	−12.91		
	0.00				0.00		0.00		
	0.00				0.00		0.00		
	−11.63				−10.93		−10.65		
				0.1574	+1.44				
				0.3019n	−2.00				
				0.2913n	−1.96				
				0.9765	+9.47				
					−0.01				
					0.00				
					+6.94				
0.1397n	+1.38	0.1323	+1.36	0.1262	+1.34	0.1162	+1.31		
9.9386n	−0.87	9.9418n	−0.87	9.9439n	−0.88	9.9458n	−0.88		
9.8624n	−0.78	9.9323n	−0.86	9.9508n	−0.89	9.9684n	−0.93		
0.9657	+9.24	0.9605	+9.13	0.9576	+9.07	0.9547	+9.01		
	−0.01		−0.01		−0.01		−0.01		
	0.00		0.00		0.00		0.00		
	+8.96		+8.75		+8.63		+8.50		
				0.5910n	−3.90	0.5649n	−3.84	0.5769n	−3.76
				9.9808	+0.96	9.9829	+0.96	9.9848	+0.97
				9.9689	+0.93	9.9874	+0.97	0.0050	+1.01
				1.1680n	−14.72	1.1651n	−14.63	1.1622n	−14.53
					−0.01		−0.01		−0.01
					0.00		0.00		0.00
					−16.74		−16.55		−16.34

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1863phae.proj..115S

Pulcova: −.08 for the two stars used.

1863 July 4ᵈ	July 5ᵈ	July 8ᵈ	July 9ᵈ
9.8877	9.8899	9.8938	9.8945
9.3577ₙ	9.3561ₙ	9.3363ₙ	9.3338ₙ
0.8455	0.8433	0.8360	0.8357
0.6319	0.6615	0.7391	0.7621
1.2969ₙ	1.2972ₙ	1.2912ₙ	1.2889ₙ
−0.491	−0.488	−0.480	−0.477

20 Hu in B

Gr 527 sp

57 Hu in B

1.3652ₙ		0.7279	+5.29	0.7153	+5.19	0.7015	+5.03
0.0316ₙ		0.8773ₙ	−7.54	0.8754ₙ	−7.50	0.8678ₙ	−7.38
0.0321ₙ		0.6640ₙ	−4.61	0.6936ₙ	−4.93	0.7712ₙ	−5.90
0.1171ₙ		1.4160	+26.06	1.4143	+25.96	1.4063	+25.60
+0.032			−0.02		−0.02		−0.02
−0.039			−0.01		−0.01		−0.01
			+19.17		+18.69		+17.32

23 Aplan Cap

1.2714			
9.8054	0.6052ₙ	−4.03	0
9.8063	0.6405	+4.37	0
9.8920	0.5624	+3.70	0
	1.1809ₙ	−15.17	1
+0.164		−0.08	
−0.016		0.00	
		−11.21	

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July 12	July 14	July 15
0.8989	0.9096	0.9038
0.3249 w	0.3169 w	0.3014 w
0.8381	0.8421	0.8433
0.8237	0.8599	0.8768
1.2813 w	1.2755 w	1.3725 w
−0.469	−0.464	−0.461

0.6666	+4.64
0.8751 w	−7.50
0.9069 w	−8.11
1.3896	+24.52
	−0.07
	0.00
	+13.54

0.5963 w	−3.94	0.5822 w	−3.82
0.6435	+4.40	0.6475	+4.43
0.6300	+4.27	0.6662	+4.64
1.1733 w	−14.90	1.1675 w	−14.71
	−0.08		−0.08
	0.00		0.00
	−10.25		−9.54

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1863phae.proj..115S

Pulcova +.08

1864	July 15		July 23		July 28		July 30	
	g.9034		g.9177		g.9241		g.9285	
	g.2098n		g.2371n		g.2054n		g.1813n	
	0.8434		0.8263		0.8347		0.8346	
	0.8794		0.9904		1.0445		1.0135	
	1.2727n		1.2416n		1.2175n		1.2064n	
		−0.460		−0.439		−0.425		−0.419
57 Cephei bt g	✗		✓		✓		✓	
Log a 1.4844	0.7842n	−0.08	0.7215n	−5.27	0.6895n	−4.89	0.6657n	−4.63
" b g.3359n	0.1793n	−1.57	0.1642n	−1.46	0.1706n	−1.48	0.1705n	−1.48
" c g.3364n	0.2158n	−1.64	0.3266n	−2.12	0.3809n	−2.40	0.3999n	−2.51
" d 0.1366	1.4093n	−25.66	1.3782n	−23.89	1.3541n	−22.60	1.3430n	−22.03
μ −0.031		+0.01		+0.01		+0.01		+0.01
ν +0.009		0.00		0.00		0.00		0.00
		−34.88		−32.73		−31.36		−30.64

25 Lacertæ

Log a 1.1163
" b g.1436n
" c g.1472n
" d g.7013
μ +0.011
ν +0.002

4 Aurigæ Bg

15 Camelop

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1863phae.proj..1155

Aug 1st	Aug 8th	Sept. 2nd	Sept 6th	Sept. 9th
9.9325	9.9366	9.9643		
9.1582n	9.1317n	9.6972n		
0.8300	0.8198	0.7993		
1.0814	1.1357	1.2481		
X 1.9467n	1.1467n	0.8287n		
-0.414	-0.395	-0.327		
X	X	X	X	X
0.6426n -4.39	0.6161n -4.13	0.3516n -2.41		
0.1659n -1.47	0.1557n -1.43	0.1352n -1.37		
0.4176n -2.62	0.4715n -2.96	0.5845n -3.84		
1.3313n -21.44	1.2633n -19.20	0.9653n -9.23		
+0.01	+0.01	+0.01		
0.00	0.00	0.00		
-29.91	-27.71	-16.84		
	X			
	0.2460n -1.77			
	9.9634n -0.92			
	0.2823n -1.91			
	0.8460n -7.05			
	+0.00			
	0.00			
	-11.65			

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Uranus −.03

	July 16 m	July 18 m	July 19 m	July 20 m
	9.9058	9.9109	9.9138	9.9147 *
	9.2900 n	9.2683 n	9.2590 n	9.2572 n
	0.8435	0.8403	0.8374	0.8343
	0.8936	0.9238	0.9279	0.9514
	1.2687 n	1.2621 n	1.2584 n	1.2546 n
	−0.458	−0.452	−0.450	−0.447

~~Sept 15 Dp~~

log a	1.2218	0.5718 n	−3.25
" b	9.6139	0.4574	+2.87
" c	9.6155	0.5091	+3.23
" d	9.8326	1.1013 n	−12.63
μ	+0.006		0.00
ν	−0.009		0.00
			−9.78

62 Mon 13 ~~62 Mon 13~~

Ellen m

log a	0.6077 n			0.0760	+1.19	0.0667	+1.17	
" b	9.1036 n			9.9439 n	−0.88	9.9410 n	−0.87	
" c	9.1076 n			0.0314 n	−1.08	0.0455 n	−1.11	
" d	9.6793 n			0.9414	+8.74	0.9377	+8.66	
μ	+0.011				0.00		0.00	
ν	−0.001				0.00		0.00	
					+7.97		+7.65	

~~64 Cam 12 p~~ 64 Cam 12 p

log a	1.2664	0.5564 n	−3.60	0.5347 n	−3.42	0.5256 n	−3.35	0.5176 n	−3.29
" b	9.1430	9.9865	+0.97	9.9833	+0.96	9.9804	+0.95	9.9773	+0.95
" c	9.1446	0.0382	+1.09	0.0684	+1.17	0.0825	+1.21	0.0960	+1.25
" d	9.8862	1.1555 n	−14.34	1.1489 n	−14.09	1.1452 n	−13.97	1.1414 n	−13.85
μ	+0.022		−0.07		−0.07		−0.07		−0.07
ν	−0.003		0.00		0.00		0.00		0.00
			−15.86		−15.39		−15.17		−14.95

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1863phae_proj_1155

July 22	July 30th	Aug 8th
9.9169	9.9282	9.9367
9.2409n	9.1829n	9.1323n
0.6295	0.8347	0.8197
0.9770	1.0625	1.1344
1.2464n	1.2071n	1.1475n
−0.442	−0.620	−0.395

X

0.4627n	−2.90
0.4434	+2.78
0.5925	+3.91
1.0790n	+12.00
	0.00
	0.00
	−8.21

X

0.0186	+1.11
9.9331n	−0.86
0.0646n	−1.22
0.9257	+6.43
	0.00
	0.00
	+7.46

X

9.9906	+0.98
9.9363n	−0.87
0.1701n	−1.48
0.8864	+7.70
	0.00
	0.00
	+6.33

X

9.9400	+0.87
9.9233n	−0.84
0.2420n	−1.75
0.8268	+6.71
	0.00
	0.00
	+4.99

X

0.4493n	−2.71
9.9777	+0.95
0.2071	+1.61
1.0939n	−12.41
	−0.01
	0.00
	−12.57

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	1863 Sept 16th	Sept. 17th	Sept. 22d	Sept. 26th
~~1857~~ Capella Hyp		✓	✓	✓
~~25~~ Camel Hyp ~~7h Draconis~~				
4 Mon B yr		✓		
156 Camel B yr	✓	✓		

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Sept. 27th Oct. 5th Oct. 7th Oct. 8th. Oct. 17th

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	1864 Sept 10th	Sept 16th	Sept. 17th	Sept. 25th
30 Capricorni	~~✓~~	✓	✓	
34 Capricorni ~~33 Capricorni~~	✓	✓		
29 Sagittarii ~~30 Capricorni~~		✓	✓	✓
30 Capricorni		✓	✓	✓

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Sept. 27 | Oct. 11h | Oct. 17h | Nov 4h | Nov 10h

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	1864 Sept 16th	Sept. 17th	Oct. 5th	Oct. 7th
Ursae B	✓			
74 Draconis	✓		✓	✓
1 Draconis Hyp	✓	✓		

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Oct. 10 Th Oct. 17 Th Oct 18 Th Oct. 19 Th Oct. 21 st.

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1863phae.proj..115S

	Sept. 30h	Oct. 3h	Oct. 17h	Oct. 26
309 Lyncis B			×	
5 Mm an Bp	×		×	
6 Mm an Bp		×		
43 Lyncis H.			×	×

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Nov 1st

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1863phae.proj..115S

	1864 Oct. 17th	Nov 11th	Nov. 14th
21h Camel B sp	x	x	x
20 Ma mi Bsp			
Gr. 527			
323 Cephei B			

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	1864 Oct. 19 Th	1864 Oct. 21 Sat	Oct. 24 M	Oct. 25 Tu
25 Camel Asp			x	
156 Camel Asp	x	x		x

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OA. 26 Ā

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1863phae.proj..115S

	1864 Oct. 25	Oct. 26	Nov. 2	Nov 3
1 Mus B	x	x	x	x
74 Draconis				
1 Draconis Hop				x

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Nov 10th

x

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1863phae.proj..115S

1864 Nov 11 m Nov. 14 m

35 Camelop.

34 Cephei

202 Camelop. x x

39 Cephei x x

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		log A'	log D	log B	log C	sin i'	cos Γ	Γ	log γ
Feb.	26	9.7412n	0.8893	0.7169	1.2394n	0.5780n	1.0843	34°49'	1.0993
March	7	9.7266n	0.6384	0.7136	1.2631n	0.8020n	1.1162	33417	1.1645
	17	9.7125n	9.9175	0.7153	1.2728n	0.9385n	1.1320	32455	1.2190
	27	9.6983n	0.4317n	0.7224	1.2693n	1.0052n	1.1243	31620	1.2649
April	6	9.6826n	0.3872n	0.7343	1.2547n	1.1681n	1.0959	30819	1.3035
	16	9.6643n	0.9711n	0.7499	1.2321n	1.2566n	1.0435	30121	1.3272
	26	9.6172n	1.0897n	0.7677	1.1753n	1.3139n	0.9605	29354	1.3528
May	6	9.6193n	1.1723n	0.7858	1.1097n	1.3658n	0.8813	28615	1.3835
	16	9.5903n	1.2307n	0.8029	1.0432n	1.3948n	0.8078	27916	1.4005
	26	9.5535n	1.2710n	0.8171	0.8840n	1.4128n	0.0348	27224	1.4132
June	5	9.5154n	1.2965n	0.8294	0.6941n	1.4208n	0.3121n	26535	1.4224
	15	9.4691n	1.3090n	0.8373	0.2097n	1.4196n	0.7206n	25841	1.4281
	25	9.4165n	1.3092n	0.8414	0.1753	1.4085n	0.9262n	25146	1.4309

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